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Canada National Development
Bureau

THE PROVINCE OF NEW BRUNSWICK CANADA

Its Development and
Opportunities

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Canada, National Development Bureau

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CANADA

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Its Development and
Opportunities

DEPARTMENT OF THE INTERIOR
CANADA

HON. CHARLES STEWART
Minister

W. W. CORY, C.M.G.,
Deputy Minister

NATURAL RESOURCES INTELLIGENCE SERVICE
F. C. C. LYNCH, DIRECTOR

[1924?]

Inquiries relating to the natural resources of the Dominion of
Canada will be given prompt attention if addressed to

The Director,
Natural Resources Intelligence Service,
Department of the Interior,
OTTAWA.

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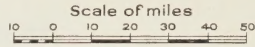
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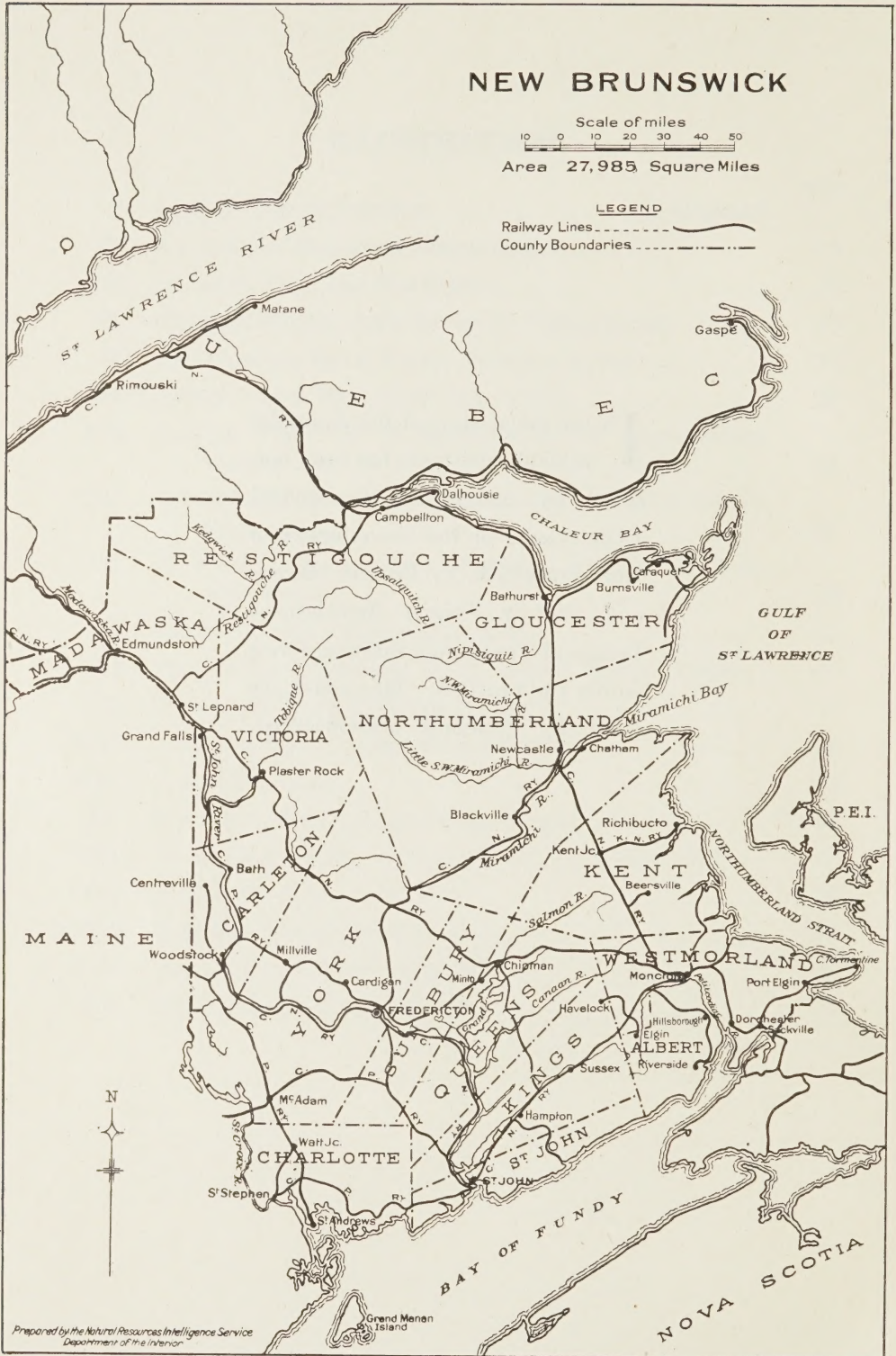
NEW BRUNSWICK



Area 27,985 Square Miles

LEGEND

Railway Lines ———
County Boundaries - - - - -



THE PROVINCE OF NEW BRUNSWICK

PART I—GENERAL

Area and Geographical Position

FROM the earliest days of European settlement in North America, the province of New Brunswick has figured prominently in the romantic history of this continent, and has been and is to-day a land famous for its forests, farms, fisheries and shipping. The largest of the Maritime Provinces of Canada, it lies mainly between the 45th and 48th parallels of north latitude and the 64th and 68th degrees of west longitude. It is almost square in shape, its length from north to south being 230 miles and its greatest breadth 190 miles. New Brunswick is bounded on the south by the bay of Fundy and (across an 18-mile strip) by the province of Nova Scotia; on the east by the gulf of St. Lawrence; on the north by Chaleur bay and the province of Quebec, and on the west by the state of Maine, U.S.A. The province is divided into fifteen counties—Charlotte, St. John, Kings, Queens, Albert, Westmorland, Kent, Sunbury, York, Carleton, Victoria, Northumberland, Gloucester, Restigouche, and Madawaska.

New Brunswick's great coast line of about 600 miles, and its position on the border of the world's most famous sea-fishing area, makes its fisheries extensive and valuable. The area of the province is 27,985 square miles, or about 17,910,400 acres. This is about five-sixths of the area of Ireland, but the population of New Brunswick is not one-tenth as great, so that it contains immense possibilities of development and offers a splendid field for the industrious settler. It is a rolling country of no great elevation, watered by numerous rivers and clothed with vast forests. The scenery is picturesque and varied, and there are unsurpassed opportunities for sport, for agriculture and for industry.

The possession, in St. John, of a splendid ice-free port, offers complete facilities for the disposal by water carriage of the products of the province, chiefly lumber, fish and agricultural produce, and for the importation of required goods. Moreover, the closing by ice each winter of the ports of Montreal and Quebec makes St. John and Halifax, Nova Scotia, the two Atlantic winter ports of Canada.

Physical Features

New Brunswick is situated in the Appalachian region, which covers the Maritime Provinces, Gaspé peninsula and the Eastern United States. It is a rolling country, full of hills and valleys. Highlands occur in the north in Northumberland, Victoria and Restigouche counties, and also along the bay of Fundy, in Kings and Albert counties. Most of the hills are of no great height, although elevations of 1,000 to 1,400 feet above sea-level are found in Kings, and in the mountainous country between the Nipisiguit and Little Southwest Miramichi rivers there is a general level of about 1,300 feet, with peaks rising to 2,600 to 2,700 feet. Mount Carleton, with a height of 2,716 feet, is the highest in the province.

The country is well served by numerous rivers flowing into Chaleur bay, the gulf of St. Lawrence and the bay of Fundy. Of these the most famous and most important is the St. John, with a basin larger than that of any other river on the Atlantic coast from the St. Lawrence to Florida. Draining an area of some 26,000 square miles (10,500 within the province), with its principal tributaries, the Kennebecasis, Nerepis, Oromocto, Nashwaak, Keswick, Tobique, Aroostook, and Madawaska, the St. John, after a course of 450 miles, discharges its flood through a narrow, rocky gorge, where are situated the famous Reversing falls, into the bay of Fundy. The tide here ranges from 13 to 30 feet and averages about 26 feet.

Other rivers flowing into the bay of Fundy are the boundary river St. Croix and the Magaguadavic in Charlotte, and the Petitcodiac and Memramcook in Westmorland county. The east coast rivers are the Restigouche with branches Kedgwick, Patapedia and Upsalquitch, the Nipisiguit, Miramichi and branches, Richibucto and Buctouche, besides numerous smaller streams.

While lakes are numerous, none are of large size excepting Grand lake, whose area is about 68 square miles. The surface of this lake is scarcely above high tide level of the bay of Fundy, and a small tide is found near its head about seventy miles inland. Among other lakes are the Chiputneticook chain on the St. Croix, the Magaguadavic and Oromocto in southern York county, and the south Oromocto and several smaller lakes in eastern Charlotte. Many small lakes are also found around the headwaters of the Tobique, Nipisiguit, and Miramichi.

Geology

The underlying rock of New Brunswick belongs to all geological formations, but the largest area is Carboniferous. This is a great triangular belt, whose land margins are along lines running from Bathurst to McAdam Junction, in southern York county, and thence due east until the bay of Fundy is reached at Shepody bay. The rock in this area is mostly sandstone. South of this area are stretches of granite, diorite, etc., particularly in Charlotte county. North of the Carboniferous area is a great slate belt,

with large granitic areas in Northumberland, Carleton and southern York. Farther north is a Silurian area, chiefly slates and limestone, but with granite outcrops near Chaleur bay.

The portions best adapted for farming are those underlaid by the slates and limestone of the Upper Silurian formations and by the red rocks of the Lower Carboniferous. Of these the former include a large part of the northern division above referred to, while in the area of the latter excellent farming lands are found about Bathurst, in the north, and in the valley of the Tobique, while in the southern part they occur along the valley of the Kennebecasis river and in parts of Kings, Albert and Westmorland counties.

Climate

New Brunswick possesses a climate conducive in a remarkable degree to good health. There is no country more free from epidemic diseases, or where people live to a greater age. Although the northern limit of the province is almost a degree of latitude south of Paris, and while the city of St. John is in the same latitude as Bordeaux and Venice, yet the climate differs considerably from that of Western Europe. The westerly winds which temper Europe with the warmth of the Gulf Stream reach and cross New Brunswick from the interior of North America and give it a continental climate, with characteristics similar to those of Eastern Europe. Proximity to the sea tempers the climate somewhat, however, so that New Brunswick is not so cold in winter nor so hot in summer as in corresponding latitudes farther inland. The average precipitation, including snow reduced to rain, is about 44 inches.

Snow generally comes to stay early in December, although a "green" Christmas is by no means a rarity. January and February are, for the most part, steadily cold, with plenty of bright sunshine and occasional mild days or spells. Early in March the increasing strength of the sun brings warmer days and causes the disappearance of the snow, which is usually all gone by the end of the month or very early in April, except in the most northerly inland sections.

The springs are not very early, and operations on the land do not begin until the middle of April or later in the southern and central parts of the province, and not until the middle of May or later in the most northerly parts. The somewhat shorter season in the northern sections is largely offset by the more rapid growth of vegetation, although only the hardier crops and those maturing in a little over three months can be grown with safety there.

The summer, while affording abundance of sunshine and heat for the proper growth and maturity of all ordinary farm crops, and many varieties of apples and small fruits, is yet remarkably free from the prolonged dusty, dry spells and hot murky nights so often experienced farther west and south. The regular and sufficient rainfall is ample for full crop growth, and pre-

cludes any necessity for irrigation, through any dry period yet experienced, where proper methods of cultivation are followed. The evenings are invitingly cool and enjoyable and are of great benefit in the care of milk in the dairy industry. The equable and enjoyable summer climate of the province attracts an increasing number of people yearly from the heat-oppressed centres of industrial New England to the south.

To aid comparison with climatic conditions in the Prairie Provinces, the following information is of interest. The figures quoted are the average of those for representative points in the respective provinces:—

Province.	Mean Temperature (Degrees Fahrenheit).	Average growing season (May-August incl.) Temperature (Degrees Fahrenheit).	Mean Annual Precipitation (inches).
Manitoba.....	36.0	59.9	20.0
Saskatchewan.....	36.0	58.0	16.75
Alberta.....	38.8	57.9	16.1
New Brunswick.....	40.8	58.9	43.6

History

The authentic history of New Brunswick begins in 1534, when Jacques Cartier first sighted its shores at Escuminac point, about 35 miles from Chatham, and landed somewhere near. But it was not until 1604 that the coast was carefully explored. On June 24 of that year Samuel de Champlain and de Monts discovered, to quote from Champlain's narrative, "one of the largest and deepest rivers that I had yet seen, which I called the river St. John, because it was on that day that I arrived there." During the following winter, Champlain, de Monts and eighty companions lived on Dochet island at the mouth of the St. Croix. Here was issued a series of papers under the title *Maitre Guillaume*, "in order that the spirits might be sustained by sundry pleasantries." There is no question but that this was the forerunner of all the journals of this continent.

During the next forty years numerous expeditions came out to Eastern Canada, among which may be mentioned those of Sir William Alexander (1621), Claude and Charles La Tour, d'Aunay de Charnisay, Nicolas Denys and Villebon. It was during this period that the famous episode occurred of the intrepid defence by the wife of Charles la Tour of their fort, which stood where now is Fort Frederick, West St. John.

Throughout the 17th century contests for this territory between the English and French were frequent, until in 1710 the former were victorious and three years later obtained Acadia by the treaty of Utrecht. Afterwards what is now New Brunswick was disputed territory as a result of conflicting contentions as to whether or not it was part of Acadia. Finally in 1756 an expedition under General Moncton cleared the St. John river. In 1761 the Tantramar marsh lands about Sackville, which had been tilled by the French, were colonized by English settlers from Connecticut and

Massachusetts. In 1762 the settlements of Maugerville, Sheffield and Gagetown were established, all newcomers being from New England. This movement rapidly extended. Settlements by Scotch and English at Bathurst and other points along the Gulf coast were started about 1764. In the following year the territory became the county of Sunbury in the province of Nova Scotia, and was accorded representation in the House of Assembly at Halifax.

Shortly afterwards the American Revolution broke out, during which the settlement at the mouth of the St. John was loyal. The province remained a British colony, and when in each of the United States edicts of banishment and laws of confiscation were passed against the persons and property of those who had remained faithful to the British government during the war, these loyalists, of whom there were about 70,000, came chiefly to Canada. On May 18, 1783, twenty vessels arrived in St. John harbour and disembarked nearly 3,000 people. The landing was in West St. John, at the foot of the street fittingly called "King." The following year saw over 9,000 loyalists in St. John. In this year that portion of Nova Scotia north of the Missaguash became a new province under the name of New Brunswick with Fredericton as the capital.

The Napoleonic wars and that of 1812 with the United States retarded the progress of the province and harassed its shipping. In these days the St. John river played an important part as a military route to Quebec by way of the Madawaska river, lake Temiscouata and Rivière du Loup. In 1812 the 104th New Brunswick regiment marched to Quebec on snowshoes in the depth of winter. The distance of 435 miles between St. John and Quebec was accomplished in 16 days, or an average of 27 miles a day without the loss of a man. In 1837 this feat was repeated in almost the same time by the 43rd Light Infantry.

The first steamboat to run on the St. John was the *General Smyth*, which inaugurated a service in 1816 between St. John city and Fredericton. The *Saint John* was the first steam craft to cross the bay of Fundy. On its maiden trip in 1827 it anchored in Digby harbour amid great excitement. The year 1825 was marked by several disastrous fires, the worst of which was that on the Miramichi, as a result of which tremendous areas of forest land were burned over and 160 persons killed.

The progress of the province in the next forty years was steady and permanent. The principal questions of general interest were concerning the bounday line between New Brunswick and the state of Maine, responsible government, and the reciprocity treaty with the United States. The boundary line was one of the questions not finally disposed of at the treaties of Versailles and Ghent, and as regards New Brunswick and the state of Maine there were continuous disputes and strife. In 1839 there was probability of war between the disputants, and military preparations were made by both sides. However, negotiations were renewed and resulted in the Ashburton treaty of 1847, which established the boundary as it is at present.

Early Government

The early government of New Brunswick was not all that could be desired, either in theory or practice. The members of the House of Assembly were duly elected by the freeholders of the different counties they represented, but the popular voice had little authority. The Governor, appointed by the British Government, claimed that he was responsible solely to the Colonial Office in London, and, with the assistance of a number of gentlemen selected by him, but whose advice he did not always take, he ruled the province, and it was not until 1855 that continued agitation resulted in a full measure of responsible government being granted to the province.

The next great question to occupy the attention of the people of New Brunswick was that of confederation. This matter, which for some time previously had been discussed in the Nova Scotia and Upper and Lower Canada legislatures, was considered in the New Brunswick Parliament in 1862-64, and in the latter year the Government was authorized to enter into negotiations and hold a convention for the purpose of effecting a union of the Maritime Provinces. The convention of these provinces was held at Charlottetown, P.E.I., in 1865, and was attended by a strong delegation from Upper and Lower Canada who urged the larger union. The convention adjourned to Quebec, where all the colonies of British North America were represented, and a scheme of union was prepared. This was rejected by the people of New Brunswick in a general election held in 1865, but the Government elected to oppose confederation resigned. A second election proved that the general feeling had changed and in the new legislature in 1866 a resolution favouring the union was carried by a vote of 30 to 8.

Similar action having been taken by the other colonies with the exception of Prince Edward Island, and the measure to bring confederation into being having been drafted, it was passed by the Imperial Parliament on March 29, 1867, as the British North America Act, and on July 1 of that year the Dominion of Canada came into existence. Prince Edward Island entered the Dominion in 1873, but Newfoundland has not done so. This Act is the Canadian constitution. There have as yet been no important amendments, so that the system of government of New Brunswick is still virtually the same.

Progress throughout the last half century has been gradual but steady. More and more of the land is being brought under cultivation. The most notable developments have been the opening up of the country by railways and the growing importance of St. John as a national winter port of Canada.

Population

The population of New Brunswick in 1921 numbered 387,876. There was no census prior to 1824, and estimates of population before that time

were largely guess work. The following table shows the growth in population in the province:—

1782 Estimate.....	800	1861 Census.....	252,047
1783 ".....	11,457	1871 ".....	285,594
1817 ".....	35,000	1881 ".....	321,233
1824 Census.....	74,176	1891 ".....	321,263
1834 ".....	119,457	1901 ".....	331,120
1840 ".....	156,162	1911 ".....	351,889
1851 ".....	193,800	1921 ".....	387,876

AREA AND POPULATION BY DISTRICTS

District	Land area Sq. miles	Population 1921		Population 1901
		Total	Per sq. mi.	
Whole province.....	27,985	387,876	13·8	331,120
Charlotte.....	1,283	21,435	16·7	22,415
Gloucester.....	1,870	38,684	20·6	27,936
Kent.....	1,779	23,916	13·4	23,958
Northumberland.....	4,749	33,985	7·1	28,543
Restigouche and Madawaska.....	4,546	32,977	9·4	22,897
Royal (Kings and Queens).....	2,856	32,078	11·2	32,832
St. John City, county and Albert.....	1,303	69,093	53·0	62,684
Victoria and Carleton.....	3,403	33,900	9·9	30,446
Westmorland.....	1,444	53,387	36·9	42,060
York and Sunbury.....	4,694	38,421	8·1	37,349

Of the total population of the province in 1921, 265,648 is classed as rural and 122,228 as urban. The number of dwellings is given as 70,428 and the number of families as 76,949, with an average of 5 persons per family. Those born in Canada numbered 365,948, British born 10,707, and born in other places 10,748. The number of male persons is given as 197,351, and females as 190,525. The number of Indians is given as 1,846 in 1917. These are of the Micmac tribe.

Origins of the People

The people of New Brunswick are mostly of English, Scotch, and Irish origin, but there are also many thousands of descendants of the original French colonists or Acadians. These latter are settled mostly along the shores of the gulf of St. Lawrence in the counties of Gloucester, Kent, and Westmorland, and are engaged chiefly in the fishing and fish-canning industries and in agriculture. The northern portion of the province, particularly the county of Madawaska, contains a considerable number of French-Canadians from the neighbouring province of Quebec. The English-speaking population is composed mainly of the descendants of United Empire Loyalists, who came from the United States at the time of the revolution there, and of settlers who since that time have been coming direct from the British Isles. The tide of immigration, which of late years had passed over Eastern Canada on its way to the western plains, now favours New Brunswick again, whose opportunities are more apparent and development more rapid than previously. The province is predominantly English-speaking, and contains no problems of assimilation of alien races, nor lack of congenial society to incoming settlers.

GOVERNMENT ADMINISTRATION AND FINANCE

System of Government

The New Brunswick Government is formed along lines similar to the Federal Government. At the head, and representing the Crown through the Federal Government, is a Lieutenant-Governor appointed by the Governor-General for a term of five years. His duties in the province correspond to those of the Governor-General in the Dominion. Though nominally head of the province's affairs, he acts on the advice of his Government. It is his duty, however, to veto any Act which in his opinion might be detrimental to the interests of the Dominion at large. The Government of this province consists of one House only, elected by the people, and called the Legislative Assembly. A second chamber, the Legislative Council, was abolished in 1892. From this Assembly the Lieutenant-Governor calls upon the leader of the party having a majority of supporters to form an Executive Council, the leader being the Premier. This Council, like the Federal Cabinet, carries on the business of the province. The Legislative Assembly of New Brunswick now consists of forty-eight members. The Executive Council consists of the Premier and eight other ministers.

The Assembly has control of legislation and matters especially affecting the province while the Federal Government controls matters of a wider nature. The subjects over which the province was given legislative authority are set out in the following list:—

(1) The amendment of the constitution of the province, except in regard to the office of Lieutenant-Governor; (2) direct taxation; (3) the borrowing of money on the sole credit of the province; (4) the civil service of the province; (5) the public lands belonging to the province; (6) the prisons and reformatories of the province; (7) hospitals, asylums, and charitable institutions; (8) municipal institutions; (9) licenses, such as those of taverns, shops, and auctioneers; (10) local works and undertakings, except lines of steamships, railways, canals, telegraph, and other works and undertakings extending outside the province, and such works which, although wholly inside the province, are declared by the Dominion Parliament to be for the general advantage of Canada, or of two or more of the provinces; (11) the incorporation of companies for business in the province; (12) the solemnization of marriage in the province; (13) property and civil rights in the province; (14) the administration of justice in the province; (15) punishment by fine and imprisonment, in case any provincial law is broken; (16) generally all matters of a merely local or private nature in the province.

By a further provision in the British North America Act, the legislature of each province may exclusively make laws relating to education within the province. There are also certain subjects, such as agriculture and

immigration, over which both the Dominion and the Provincial Governments have jurisdiction. In case, however, the law passed by the province does not agree with that passed by the Dominion, the latter governs. Any law passed by the Provincial Government may be disallowed by the Dominion Government within one year after the receipt of an official copy of the Act. This, however, is very seldom likely to occur, except when the Act is one that interferes with the general welfare of Canada or the Empire.



PARLIAMENT BUILDINGS, FREDERICTON

The view from here, across and down the St. John river, is one of the most beautiful in Canada

The Executive Council of New Brunswick consists of seven ministers in charge of departments and two ministers without portfolio. Following out the basic principle of self-government which characterizes the success of British rule everywhere, the Provincial Government grants to local bodies of her residents the rights to manage their own affairs as they desire, restricted only in so far as necessary for the well-being of the province at large. Four forms of municipal government are provided for according to the progress and population of the community. Three provide for urban centres and one for rural settlements. They are graded in the following order of descending responsibility: cities, towns, villages and rural municipalities. These municipalities all receive their incorporation from the Provincial Government. They elect their own officers, fix their assess-

ment and tax rate, raise and spend money, make by-laws, and generally look to their own advancement and welfare under several provincial and federal regulations.

Administration of Justice

The laws of New Brunswick, like all the other provinces of Canada except Quebec, are founded upon the Common Law of England. In addition to this law all English Statute Law down to the restoration of Charles II is considered to have been adopted by the General Assembly of the province at its first session. Much of the later English Statute Law is also in force in the province because of having been re-enacted by the Provincial Legislature. Other laws have been enacted by the Dominion Parliament.

This Parliament in 1875 established the Supreme Court of Canada and later the Exchequer Court. The Supreme Court has appellate jurisdiction from all the courts of the provinces. The Governor-General in Council may refer questions to it. Its judgment is final in criminal matters. This court also has jurisdiction in cases of controversies between the provinces and the Dominion, and in certain cases between the provinces themselves.

There is an appeal from the Supreme Court in civil cases, under certain limitations, to the Privy Council in England. The Privy Council also entertains appeals direct from the provincial Appeal Courts without the intervention of the Supreme Court of Canada. The decisions of the Privy Council contain most valuable and important declarations of law as to the constitution of Canada and as to the varied powers of the Federal and Provincial Legislatures.

The law is administered within New Brunswick by various courts, all of which have jurisdiction in both civil and criminal matters. The jurisdiction of the Supreme Court of New Brunswick extends over the entire province. The court consists of three divisions—a Court of Appeal, a Chancery Division, and a King's Bench Division. The judges of this court are seven in number.

The county courts have jurisdiction only over their respective counties, and are limited to actions in which no greater a sum than \$400 is involved in matters of contract and \$200 in matters of tort. They cannot deal with matters affecting the title to land or the validity of bequests under wills. They have criminal jurisdiction in all misdemeanours and in all but the more serious felonies.

Stipendiary magistrates' courts and parish courts have more limited powers. Finally come justices of the peace, whose jurisdiction extends only to \$20 in contract and \$18 in tort.

Naturalization

Any alien desiring naturalization may apply to the Secretary of State of Canada for a certificate, provided that he can comply with certain conditions, namely, he must have a residence of five years in Canada or a British possession, of which at least one must have been actually spent in Canada—all this within the last eight years before his application. Any person receiving this certificate shall be entitled to all the political and other rights, powers and privileges of a British subject, and be subject to all obligations, duties and liabilities of the same. The Secretary of State may include in the certificate the names of all the children of the applicant who are minors. The applicant who is a resident of New Brunswick should apply to the Supreme Court or the county court of the county in which he is situated. The clerk shall post up his application for a specified time and then report the application to the Secretary of State, who issues the certificate if satisfied as to the circumstances.

Banking

The Canadian banking system provides the province with the best of facilities for the transaction of business. All the banks are chartered by the Dominion Government, and instead of having numerous small banks scattered throughout the country, each of which is dependent on the prosperity of its own locality for stability and strength, under the Canadian system the banking institutions are permitted to operate from their head offices, located in the largest commercial centres, any number of branches which the management and directors consider necessary to serve the interests of the country and the bank.

There are fourteen chartered banks doing business in Canada, many of which are represented in New Brunswick. Probably every town and village of 600 people is supplied with at least one bank.

That the Canadian banks are as strong as any in the world will be seen from the following statement, as at February 29, 1924.

Total paid up capital.....	\$	123,512,300
Total reserves.....		123,775,000
Total public deposits in Canada.....		1,684,270,641
Total assets.....		2,656,844,963

Note holders and depositors are secured by the large capital and reserve of each bank, and by the liability of each shareholder for double the par value of shares owned.

Currency

The decimal system of currency is in use in Canada, the unit of value being one cent (equivalent to one halfpenny) one hundred of which make a dollar. At normal rate of exchange one pound (£1) is equal to four dollars and eighty-six cents (\$4.86). The common Canadian silver coins are 5-cent, 10-cent and 25-cent (or "quarter") pieces while the larger amounts are usually handled in paper Dominion Government or bank bills of various dollar denominations.

Finance

PROVINCIAL

The chief source of revenue is the customs tariff which is administered by the Dominion Government. Funds necessary for the carrying on of the province's affairs are secured from various sources, chief among which are subsidies from the Dominion Government and fees collected by the several departments such as stumpage, motor vehicles tax, succession duties, amusement taxes, etc.

The administration of the affairs of the province requires a considerable expenditure, which is added to by interest on the public debt. This debt has been acquired by borrowings for undertakings, chiefly of a permanent nature, such as means of communication and public buildings. The main items of expenditure are those under education, agriculture, administration of justice, legislative assembly, and public works.

Herewith is a financial statement issued by the New Brunswick Government:—

Bonded Debt (Including proposed issue of \$800,000).....	\$ 29,383,932
Less: St. John & Quebec Railway (Operated by The Canadian National Railway)	
Debentures.....	\$ 7,111,977
Hydro electric power development.....	3,050,000
Sinking Funds.....	1,348,677
	\$ 17,873,278
Indirect liabilities fully secured.....	1,167,000
Estimated value of seven million acres timber limits owned by province..	\$ 50,000,000
Public buildings and ready made farms.....	1,000,000
Annual subsidy receivable from Dominion Government.....	666,765
Agricultural production, 1922.....	42,965,000
Estimated assessable property within province.....	200,000,000
Revenue, year 1922.....	3,117,445
Expenditures, year 1922.....	3,046,869
Amount of increase in sinking funds for 1923.....	493,677
Population is 387,876. Area 27,985 sq. miles.	

The Provincial Government does not assess real estate or personal property for revenue purposes.

MUNICIPAL

Municipalities raise their money by direct taxation. Each has its assessor, whose duty it is to prepare an annual statement showing all lands within the boundaries of the municipality together with the owners' names, to set a valuation on these lands and on the buildings and improvements thereon, and to prepare a roll of the adult population of the municipality showing the value of the personal property and the amount of income of each. A tax is then levied to meet the estimated requirements of the ensuing year. These taxes are for roads and bridges, for schools, for general administrative purposes, for the establishment of water and sewage systems, and for the acquisition and operation of public utilities.

Education

Under the provisions of the British North America Act the legislature of each province in Canada exercises exclusive control of education within its own boundaries. In New Brunswick it is under the charge of the Board

of Education, composed of the Lieutenant-Governor, the members of the Executive Council, the Chancellor of the Provincial University and the Chief Superintendent of Education. The latter official has the supervision of the entire system, being ex-officio the president of the University Senate, as well as superintendent of all public schools of lower grades.

The educational system of the province, inaugurated in 1871, is most thorough and comprehensive. It is headed by the Provincial University at Fredericton, and from this distinguished seat of learning to the most humble rural public school, provisions for the dissemination of knowledge are most complete. The courses of study in the various grades, through primary, intermediate, superior and grammar schools and the university, are carefully co-ordinated and correlated, so that a child may proceed step by step until he or she graduates in either arts or science.

The New Brunswick school section must be at least three and a half square miles in area or have at least fifty children of school age. In rural districts the governing body is composed of three trustees elected by the ratepayers, and they levy the school tax. The funds for teachers' salaries are supplemented from two other sources—the county fund and the provincial grant. Special grants are given to consolidated schools, and for the conveyance of children to and from school where the children in certain large areas are too few and scattered to require more than one school. In cities and towns the Board of Trustees consists of nine or eleven members, the majority of whom are appointed by the municipal council, and the remainder by the Provincial Government. Two of the members may be women.

All the public schools of the province are non-sectarian. There are two prominent religious educational institutions—Mount Allison University (Methodist) at Sackville, and St. Joseph's College (Roman Catholic) at Memramcook.

Manual training and household science departments are operated by the School Boards in most of the cities and towns and are generously assisted by the Provincial Government. Vocational training of less than college grade for persons over fourteen years of age is also provided.

A high standard in the teaching staff is maintained through the training of teachers in the Normal and Model schools at Fredericton, through school inspection and through adequate provision for the payment and pensioning of teachers. The province is divided into eight inspectorial districts, each with one inspector whose duty is to inspect all schools in his district, make monthly reports of visitations to the Education Department, and generally to assist in promoting educational efficiency.

The Provincial University was founded and incorporated as the College of New Brunswick in 1800. In 1859 the University of New Brunswick was established as now constituted. It confers the degrees of bachelor and master of arts; bachelor, master, and doctor of science; doctor of philosophy,

bachelor and doctor of civil law, and the honorary degree of doctor of laws. An effort has recently been made to consolidate all the higher educational institutions in the maritime provinces.

Agricultural education is provided in the common schools, in two special agricultural schools, one at Woodstock and one at Sussex, by the demonstrational and instructional work of district representatives, and through agricultural societies and school fairs.

CITIES AND TOWNS

St. John

The geographical position of New Brunswick, and the exploitation of her natural resources, have brought into being numerous urban centres and are responsible for the growth and prominence of her cities. The long coast line, and the proximity of the province to one of the greatest fishing areas of the world, have caused fishing villages and towns manufacturing fish products to spring up along the coast. The lumbering industry is responsible for several urban centres of importance as is also agriculture. Cheap light, heat, and power in the form of natural gas has made an important industrial city of Moncton, and finally its great facilities as a national port has made St. John one of the most important cities in the Dominion.

Brief descriptions of the more important cities and towns are given below. Those desirous of obtaining more complete information regarding business, professional or other opportunities in any of the towns or cities of New Brunswick should communicate with the secretary of the local Board of Trade or with the city clerk, town clerk or village secretary-treasurer, as the case may be.

The site upon which St. John stands and its geographical position are such that this city could not but be important, and its progressive people, alive to the great opportunities of their city and port, are ensuring that St. John, which already has a population of about 50,000, excluding suburbs, will ultimately become one of the great ports and cities of the world. It has been aptly described as "one of the big front doors of Canada on the Atlantic coast—a door that is never closed winter or summer." In fact it is as a national winter port that its importance is most pronounced.

St. John is situated on the bay of Fundy, at the mouth of the St. John river. This great river is 450 miles long, and passes through a most fertile and beautiful region. The various products of the major part of the province find their way to the sea at St. John, where also the Canadian Pacific and Canadian National railways join forces with ocean steamships from all parts of the world.

This city is an important manufacturing, wholesale, and retail centre. Among its industries are lumber, woodworking and pulp mills, box factories, cotton mills, wool and hide plants, a sugar refinery, fish product plants, metal foundries, lime-kilns, paper-bag works, edge-tool plants, tanneries, potteries, breweries, flour mills, and factories for manufacturing nails, biscuits, confectionery, and brooms and brushes.

St. John is the financial and commercial metropolis of the province, and its development in this respect has been remarkable, especially within



ST. JOHN, CITY AND HARBOUR

In the foreground is the famous Reversing Falls in which the current alternates towards and from the sea.

recent years. It has eighteen branches of chartered banks and numerous other financial institutions.

But it is chiefly to overseas trade that St. John owes its great importance, and in this trade, which will come through the development of Canada generally, she lays her hopes for the future. The closing by ice of the ports of Montreal and Quebec for about five months each year leaves St. John as the Atlantic port nearest to Central Canada. For this reason it has been selected as the eastern terminus of the Canadian Pacific railway and as its winter port. It is also the terminus in New Brunswick of the Canadian National railways. St. John is the great railway focus of the province.

The harbour of St. John is a magnificent body of water. Although it has great natural advantages, being never affected by ice, and protected from storms from most directions, yet it has been very greatly improved.

The main harbour on its west side possesses ten berths, with a sufficient depth of water for modern ocean-going steamers—32 feet at low tide and 58 feet at normal high tide. On the eastern side of the main harbour are three berths, while at the “Long Wharf” situated in the northern part of the harbour, are two berths. Still another berth is that at the Atlantic Sugar Refinery, situated near the south of the harbour. This latter berth is connected with the Canadian National railways, as is the greater part of the eastern front of the main harbour. There are three grain elevators with a total capacity of 2,250,000 bushels.

Just outside the main harbour to the east lies Courtenay bay, which is being transformed to offer great additional facilities. Here is situated a large dry dock, 1,150 feet in length, and adjacent to it a breakwater 7,070 feet long.

Moncton

Moncton is the second largest city in New Brunswick and is rapidly growing in importance. Its population is estimated to be 18,000 and with its suburbs nearly 25,000. One of its outstanding features is its importance as a railway centre, it being the converging point for several lines. It also contains the workshops and offices of the Canadian National railways, some 3,000 persons being employed in these two branches of the service. Being a railway centre it is naturally an important manufacturing and distributing point as well. An important Toronto company has a large six-storey warehouse here for handling its business in the Maritime Provinces. Still another factor contributing to the development of Moncton is natural gas. This important natural resource is dealt with under the chapter on minerals and mining. The gas is piped to Moncton from the wells and supplies factories, business houses and homes with cheap power, light, and fuel, it being the only city in Eastern Canada in this position. Among the industries of Moncton, in addition to its railway shops, are foundries, machine shops, woollen mills, cotton mills, a carriage factory, hat and cap factory, biscuit factory, marble works, wire-fencing plant, grist mill, wood-working plants and mattress factory. Moncton is also a decidedly attractive residential city. Its scenic attractions are notable, and include the famous tidal “bore” on the Petitcodiac. The wonderful wave-sculptured rocks of Hopewell are within a convenient distance.

Fredericton

Fredericton, the capital of New Brunswick, is very pleasantly situated near the head of navigation on the St. John river. As early as 1692 this site was the seat of government of Acadia. Over a hundred years later it was again chosen as the location of the capital, this time of the province of New Brunswick. Fredericton is a city of about 8,000 population. Here are the Parliament buildings, the university of New Brunswick, and the Provincial Normal School. The city is also noted for the beauty of its

cathedral. Its public buildings, its elm-shaded streets and comfortable homes, and the beautiful river on which it is situated, all combine to make the capital a very attractive place in which to live. The city also has some industries of importance. These include a canoe and motor-boat factory, boot and shoe works, lumber mills, tanneries, farm implement works, etc. Fredericton is also an excellent starting point for tourists and sportsmen, who may here procure guides and equipment, and need not proceed far in any direction before reaching the haunts of big game, and streams for canoeing and fishing.

Other Towns

Sackville is a growing town near the Nova Scotia border, in the famous agricultural district of the Tantramar marshes. It has a population of about 4,000 and is becoming noted as an active industrial centre. Here are made stoves, ranges and furnaces, boots, harness, paper boxes, concrete blocks and building stone. Sackville is the seat of the Methodist university of Mount Allison.

Towns worthy of note are Chatham and Newcastle on the Miramichi, Campbellton and Bathurst on Chaleur bay, St. Stephen at the head of tidewater on the St. Croix and St. Andrews at its mouth, and the farming centres of Woodstock on the St. John, and Sussex in Kings county. The first four towns owe their importance to the forests, whose products reach them chiefly by the rivers at whose mouths they are situated. These towns ship their products, lumber and pulp, direct to their destinations in Europe and elsewhere. St. Stephen is an industrial town also, but its products are varied, and include soap, confectionery, chemicals, edge tools, bricks, fertilizers, carriages and aerated waters. St. Andrews is a popular summer resort and has a deep harbour open all the year round.

Other important towns and villages are Marysville, Edmundston, Milltown, Dalhousie, Shediac, Grand Falls and Dorchester.

The development and preparation of natural resources within its boundaries is improving the general conditions of New Brunswick's cities and towns. Forest products are now more and more being used as raw materials for factories, and the present programme for utilizing water-powers will provide for many additional industries. The shipping facilities, particularly those of the great port of St. John, are bringing to the province tropical and other products which may advantageously be worked up here. Thus sugar refining and cotton spinning are already industries of note. The development of fruit-growing and sheep-raising should give rise to greatly increased preserving, packing and wool-spinning industries. The canning of fish is also subject to great development.

The outstanding call, of course, is for tillers of the soil. But with increase in land settlement will come improved opportunities for the merchant, manufacturer and professional man.

TRANSPORTATION AND COMMUNICATIONS

Waterways

From earliest times the territory now called New Brunswick has had relatively excellent communication, as is also true to-day. When Champlain discovered the St. John river in 1604 he found from the Indians that this river and its tributaries formed the great part of a water highway for canoes, extending, with few portages, right to the St. Lawrence near Tadoussac. During the early days of settlement and strife in Eastern North America this route was in constant use by canoes in summer and snowshoes in winter.

To-day this river is hardly less important as a means of communication. During the season of navigation there is a regular steamboat service between St. John and Fredericton, a distance of eighty-four miles. Some 125,000,000 feet of lumber are floated down the river as logs in the course of a year to feed the sawmills and pulp and paper plants at points along the stream.

In like manner the other rivers of the province were utilized in early days as the only means of travel and transport within the province, and settlement took place along their banks. Indeed it is chiefly confined to them to this day. Also they perform a great service in bringing down to places where they can be worked up the forest products of the country. The rivers of the province are so well distributed that they have been and are of the greatest assistance to the lumbering industry.

Roads and Bridges

For a long time the waterways were the only highways of the province but now the settled districts are well supplied with roads. The importance of good roads for the development of a country, and the convenience and prosperity of its inhabitants, is fully appreciated in New Brunswick, and every effort is being made to improve and maintain the highways of the province. The fast increasing general use of the automobile has served to intensify this movement and perhaps is largely responsible for the Highway Law, which came into force in 1918.

Under this Act, the roads of the province are divided into trunk roads and branch roads, the latter being divided into several divisions. The general superintendence of all the highways, including their construction, maintenance and repair, is in the hands of the provincial road engineer. This official has direct charge of the trunk roads, but the branch roads are placed under divisional supervisors, who are appointed annually by the ratepayers of the respective divisions in which they act. Taxation and motor vehicle license fees provide the necessary funds for this work.

There are over 1,500 miles of main trunk roads, over 1,600 miles of secondary trunk roads, and 10,500 miles of ordinary by-roads under the care of the provincial road engineers. In addition there are, in some places, winter roads which may be laid out by the road supervisor at any place and over any private property that occasion may demand, subject, in case of

owner's objection, to payment of damages. Such roads may only be used by the public between December 1 and the following April 1 for the period of two years from the payment of the damages.

The province is fortunate in having, with few exceptions, an abundance of good gravel adjacent to all road projects, so that when the general road programme is completed the province will have an excellent system of high class gravel roads that should be, owing to the proximity of gravel pits, well maintained at a reasonable cost.



CROSSING THE ST. JOHN RIVER AT FREDERICTON
One of the many fine steel bridges crossing the rivers of New Brunswick.

The provincial system connects with Nova Scotia at Amherst and with the Quebec system at Matapedia and Edmundston.

Intimately related to the highways are the bridges which span the innumerable streams found in all parts of the province. Over 5,000 bridges are in use. Some are handsome structures of steel with granite foundations, and many of them are provided with swing draws of the cantilever type which open and close to permit of vessels passing through.

Other bridges, known as "ordinary bridges," are substantially built of wood, and several of these are of considerable length. The total length of the wooden bridges alone, if put end to end, is upwards of 30 miles; while the steel bridges, of which there are more than 100, vary in length from 250 yards to over half a mile. These bridges are all under the care of structural superintendents, whose duty it is to see that they are kept in proper repair.

The annual expenditure for roads and bridges by the Provincial Government, not including the cost of permanent steel bridges, which is borne by capital account, is in round figures about \$400,000, and the municipal contributions in cash and statute labour are about a third of this sum. The province has expended upon the erection of permanent steel bridges in the last thirty years approximately \$5,000,000.

Ferries

Notwithstanding the existence of all these roads and bridges, it is still necessary in some parts to make use of the rivers and the sea as highways of communication between certain places. Subsidies and other expenses to the amount of \$30,000 are annually provided to help maintain ferries in different parts of the province, which in some cases provide the only means of access from the outlying districts.

The most notable services are on the St. John, Kennebecasis, and St. Croix rivers, on Grand and Washdemoak lakes, Chaleur bay, and by sea between points on the coast.

Railways

Of the five eastern provinces of Canada none is better provided with railway facilities, population considered, than is New Brunswick. That they are well distributed and so located as to serve adequately provincial and national needs, is evident from a glance at the map. There are over 1,800 miles of steam railways within the province, all told.

There are two railway systems in the province, the Canadian National or state-owned line, and the Canadian Pacific. Many portions of both were formerly independent systems and are still sometimes referred to by their old names.

The Canadian Pacific, which is concentrated in the western counties, has its eastern terminus at St. John. It has acquired or leased all of the lines in western New Brunswick, including the old St. John and Maine railway with its branch to Fredericton; the New Brunswick and Canada railway from St. Andrews to Woodstock with its branches to St. Stephen; the New Brunswick railway, from Fredericton to Woodstock on the east side of the river, and from Woodstock north to Edmundston; and the Tobique Valley railway. In the winter season this system carries immense quantities of European freight. The towns served by it, in addition to the cities of St. John and Fredericton, include St. Andrews, St. Stephen, Woodstock, Hartland, McAdam, St. George, Andover, Grand Falls and Edmundston. The total length of this railway in New Brunswick is 614.6 miles.

The Canadian National system is composed of the Intercolonial railway, the National Transcontinental, the St. John Valley, and numerous smaller railways. The Intercolonial enters the province from Nova Scotia at the Missaguash and travels around the northeastern side of the province

to the boundary of Quebec at Restigouche. At Moncton are to be found the eastern headquarters of the system, with the general offices and shops, which cover many acres of ground. From Moncton one branch runs to St. John and others to and from various points, including what was the International railway, running from Campbellton to St. Leonard, in Madawaska county.

The New Brunswick portion of the National Transcontinental railway runs through the centre of the province from the northeast corner of Madawaska county to Moncton, a distance of 244 miles. This is a splendid piece of railway engineering; it is practically level from one end to the other. The roadbed is of the most solid construction, bridges and culverts are all of steel and granite, and it is ironed with 80-pound rails. This line was recently completed, and as it passes through forested country there are many opportunities for the development of the natural resources along its course.

Among the first settled and the most fertile districts of the province, the St. John river valley stands pre-eminent. But it has not had a railway throughout its course until very recently. The St. John Valley railway was given generous assistance and finally taken over by the New Brunswick Government. It was completed and in operation in 1919 from Westfield, on the Canadian Pacific railway, 14 miles from St. John city, to Centreville, 88 miles above Fredericton. It is sure to prove a direct stimulus to production in this fertile region, particularly of fruits and other goods of a perishable nature where rapid transference to markets is essential.

Another important feature of this line is that it provides the Canadian National with a shorter route to St. John. The National Transcontinental line crosses the Intercolonial at McGivney Junction, 34 miles from Fredericton, and traffic coming over the Transcontinental, instead of having to go to Halifax, a distance of 284 miles, to reach tidewater, can be diverted to Fredericton and thence down the Valley line to St. John, a total distance of about 100 miles. With this idea in view, the line from Fredericton to Westfield has been constructed to the National Transcontinental standard, whereas that from Fredericton north to Centreville was built to the slightly lower standard of the Intercolonial.

Communications

The telephone and telegraph facilities in New Brunswick are in keeping with the general advancement of its utilities. The telephone penetrates even to the remote rural districts, and affords a tie which links communities together and provides a convenience everywhere that nowadays amounts almost to a necessity. The telegraph situation is represented by the railways, the steel being followed by the wires everywhere and each railway station being either a telegraph office, or, in the case of the smaller stations, connected by telephone to the nearest operating point.

The postal service is administered by the Federal Government and is maintained in a state of high efficiency. The number of post offices in New Brunswick is over 1,100. The cities of St. John, Moncton and Fredericton have postal deliveries and collections. Many rural routes have been established and mail is delivered at the farmer's gateway throughout most of the settled part of the province. This service is recognized to be of primary importance and is being extended as rapidly as possible. The only cost to the farmer is the price of the mail box.

External Transportation

The external transportation facilities of New Brunswick, and its geographical position, are responsible for the importance of its foreign trade. St. John is the nearest ice-free port on the Atlantic to Montreal and the heart of Canada. This consideration has made St. John the eastern terminus of the Canadian Pacific railway and has made it one of the largest ports in Canada in point of volume of trade. Particulars of the city and harbour were given in the previous chapter on cities and towns.

Some conception of the importance of St. John in connection with ocean-borne traffic may be gathered from the fact that, during the winter, lines of steamers are regularly plying between its port and such distant parts of the world as Liverpool, London, Manchester, Bristol, Dublin, Glasgow, Havre, St. Nazaire, Bordeaux, Antwerp, Christiania, South Africa, New Zealand, Australia, British West Indies, Cuba, British Guiana, Argentina, and ports on the Mediterranean. Ocean distances to important ports of the world are:—

OCEAN DISTANCES		Nautical miles
St. John to—		
Belfast.....		2,588
Glasgow.....		2,660
Liverpool.....		2,747
London.....		2,967
Havre.....		2,830
Bordeaux.....		2,836
Antwerp.....		3,020
Panama Canal.....		2,350
Havana.....		1,650
New York.....		560
Boston.....		287
Halifax.....		262

The fact that Canada as a northern nation needs to import the distinctive products of the tropics, which, in turn, need many of the commodities that Canada can supply, gives added importance to the national port of St. John in view of its convenience for trade with the British West Indies. An increase in the interchange of products between these portions of the Empire is considered to be of such great benefit to all that an agreement between Canada and these colonies has recently been made whereby mutual preferences of considerable extent are given, and arrangements made for greatly improved steamship and cable services. The advantages to St. John of this agreement will undoubtedly be great, both in trade and in increased manufacture in the city of tropical raw materials.

Although St. John is by far the most important port of New Brunswick, yet there are several other harbours, which are of considerable importance. From the ports of Campbellton, Bathurst, Chatham, and Newcastle forest and other products of the province are frequently shipped direct to Europe and other distant points. New Brunswick also carries most of the traffic of Prince Edward Island, which crosses by car ferry from Cape Tormentine.

It will thus be seen that this province has a most fortunate geographic position, and a possession beyond value in a great ice-free port with a short rail-haul to Central Canada. This condition gives producers here an important advantage over those farther west in low transportation charges. Moreover the existence of excellent shipping services affords easy and economical despatch of the province's own produce. New Brunswick's trade and general prosperity must share in the development of the country at large.

PART II—NATURAL RESOURCES

AGRICULTURE*

New Brunswick's greatest natural resource is land suitable for agriculture. Of the total land area of the province, 17,910,400 acres, some ten million acres are estimated to be suitable for farm purposes. According to a report by the Dominion Bureau of Statistics for 1923 there were 1,188,200 acres under crop on 36,655 farms. The values of farm products in 1923 were:

	1923
Field crops.....	\$ 20,864,000
Farm animals.....	1,608,000
Wool.....	197,000
Dairy products.....	7,481,000
Fruit and vegetables.....	1,195,000
Poultry and eggs.....	1,042,000
Fur farming.....	183,000
Maple products.....	43,000
Clover and grass seed.....	40,000
Total.....	\$ 32,653,000

In the past the tide of immigration flowed by the Maritime Provinces on its way to the great plains of the West. But the high price of land there and the lack of forest, mountain and stream with all that they mean to the home life of a people, together with high transportation charges on requirements and products of points in the interior of the continent have of late directed attention to New Brunswick, a province with an abundance of cheap, fertile agricultural land, with beautiful woods, streams, valleys and upland slopes, and a most advantageous geographical position entailing unexcelled transportation facilities and short hauls to markets and tide-water. Already people are coming back from the West to make their homes in New Brunswick and capital is being applied to its agricultural and industrial development. The province is enjoying increased prosperity and progress and its farming opportunities offer a healthy, independent and profitable livelihood to prospective settlers.

To men of moderate capital with a preference for mixed farming or with fruit-growing or sheep or poultry-raising as a specialty, New Brunswick offers distinct advantages. Owing to the fact that this province has not been exploited as an intensive or specialized farming country, it is able to offer excellent farm properties, many of which are well adapted to a combination of general mixed and specialized farming, at prices ranging from \$15 to \$90 per acre, according to the location, quality, buildings and other such conditions.

*The greater portion of this section was furnished by the Department of Agriculture, Fredericton, N.B.

Farm Lands and Soils

The soil of New Brunswick suitable for agricultural purposes, may be roughly divided into three classes—upland, marsh land, and intervale.

The uplands, which comprise the great bulk of the farming lands of the province, are of different qualities, varying from rich alluvial loam, capable of producing large crops of hay, cereals and roots, to the very light sandy soils not sufficiently profitable for cultivation and suitable only for pasturing sheep. The character of these lands is very generally understood and the term "upland" is applied to them in this province as distinct from the intervale and marsh lands.

The practically inexhaustible "marsh lands," which are found all along the bay of Fundy, eastward from St. John, form one of the most valuable farming assets of the province. In appearance they resemble flat stretches of prairie meadow covered with rich grass and are not at all to be confused with bogs or swamps. These so-called marsh lands have been created by the extraordinary tides of the bay of Fundy, and are wonderfully fertile. It is recorded that at Jolicure, county of Westmorland, thirty-five consecutive annual crops of hay of an average of two tons per acre have been harvested and the quality gives promise of remaining so indefinitely. The land which used to be overflowed by the tide was reclaimed by dikes built by the early French settlers, and now forms a vast natural meadow with a soil sometimes 80 feet deep. It yields heavy crops of hay year after year without any fertilizing and this inexhaustible supply of cheap hay from the marsh is of great advantage to the stock farmers. If at any time the land needs reviving, the dike gates are opened for a while so that the tide can come in and deposit a fresh layer of soil. They are not, however, equally good for all crops, but are best for grasses and grains, to which they are almost entirely given up. The grasses, the usual upland English hay grasses, grow very tall, very dense, and of very superior quality, luxuriant but not rank. No attempt is made to take two crops a year, though some farmers allow their cattle to fatten on the rich aftergrowth. The only cultivation consists in an occasional ploughing, on an average once in ten or fifteen years, when a single crop of oats is sown, after which the land is at once brought into grass again. There are upwards of forty thousand acres of these dikes and reclaimed marsh lands along the bay of Fundy, east of St. John, most of which are in the counties of Albert and Westmorland.

The "intervale lands" of the river valleys were described by Professor Sheldon, who investigated the agricultural capacities of New Brunswick, as follows: "These intervale lands, as they are aptly termed, of the St. John, Miramichi and other river valleys, are among the most valuable to be found in the Dominion of Canada, and they are generally attractive in appearance, sometimes forming beautiful and extensive islands in mid-

stream, but generally flanking the river on either side. They are annually covered, more or less, and for a longer or shorter time, by the spring freshets of the rivers by which they have been formed, and are so often enriched by the alluvial deposits of mineral and vegetable matter which is left by the subsiding waters. Generally speaking, these intervalles are clothed with a thick sward of rich and varied grasses, forming herbage unsurpassed by the natural grasses of any portion of the American continent, and equally valuable for pasturage or for meadow.

"To the upland farms adjoining, many of which have a frontage on the river, these intervalle lands are of great value. Cutting year by year large crops of hay of good quality, and requiring no assistance beyond that which the freshets furnish, they provide a large supply of forage for the winter use, and valuable aftermath for pasturage in the autumn. Thus it is that the river helps to maintain the fertility of the uplands—by covering the lowlands with a sediment which does away with the need of employing other fertilizers, so that the whole of the barnyard manure may be used on the uplands."

The land not yet brought under cultivation, of which the province holds some 7,000,000 acres, is mostly timbered. A considerable portion is not suitable for agriculture, but there are extensive areas which, on clearing, would make excellent farming land. These Crown lands can be obtained by settlers as free grants of 100 acres by residing on the land for eight years, clearing ten acres and building a house 16 by 20 feet.

No land is thrown open for settlement, however, unless it is well served by roads and is adapted for agriculture. One of the important features of the forest survey that is now under way is the classification and marking out of the agricultural lands, the object being to direct future settlement to suitable farming localities and to prevent the denuding of purely timber land under the guise of clearing for agricultural purposes.

In the counties of Victoria and Restigouche are the principal areas that have been made available for settlement, although districts containing good land have been opened in Westmorland and Queens also. Of these new districts the Blue Bell tract is perhaps most worthy of attention. It comprises some 50,000 acres in Victoria county, and is bounded by the Canadian Pacific railway, the St. John river and the Canadian National railway. It is a rolling upland, covered with a fine growth of trees, free from underbrush and easily cleared. The soil is a reddish loam with clay subsoil, and is well watered by branches of the Tobique river. Nearby are the towns of Grand Falls and Plaster Rock. In this area 7,000 acres has already been thrown open for settlement and 100-acre lots are available on each side of the colonization road which has been constructed. St. Quentin and Kedgewick, in Restigouche county, are thriving settlements populated chiefly by French-speaking farmers.

Classes of Farm Lands Available

Farms in various stages of improvement may be purchased throughout the settled portions of New Brunswick as well as the above-mentioned Crown Lands. They may be classed as to soil, area under cultivation, equipment, and general condition. They range from the very best in each class downwards, neglect from lack of help or change of ownership being often responsible for unfavourable conditions where they exist. Vacant farms, where such exist, are often well worth taking up, though in some cases they are the result of settlement attempted in the past on land not suitable for agriculture.

Improved farms available for purchase vary in size from 75 to 200 acres, with from 20 to 100 acres cleared and ready for cropping and pasturage, an abundance of firewood and in some cases a fair amount of lumber. A number of these farms have small orchards sufficient to provide all the apples and such fruit needed for family use. The buildings are generally adequate, in some cases needing repair, but usually ready for occupancy and worth as much or more than the entire cost of the property. While the soil on some of these places is somewhat run down from neglect, they are so cheap that the new settler can afford to buy hay and fertilizer the first year with which to sustain his live stock and produce his crops.

Why Farms Are So Readily Obtainable

Two factors—the lure of the cities and professional life, and the extraordinary development of the West—have done much to deplete the rural population of the Maritime Provinces and Ontario, and have left a number of farm homes where the old people find themselves all alone or with most of their family gone. Unable to keep the farm up to its former state of production and with nobody in the family to take it over they prefer to dispose of it to some one better able to work it, and spend the remainder of their days in retirement in a nearby town.

Other farms are to be had in fair quantity whose owners are principally interested in lumbering, fishing or hunting and who use the farm chiefly as a place of residence, growing vegetables and other produce just sufficient for their own use. In these cases the farming operations are secondary to the others; many such farms are capable of far greater production.

Under the above-noted conditions a considerable number of farms have become vacant. The best of these are being repopulated under the Farm Settlement Board and already a large proportion have been occupied again. Others are not suitable for agriculture and should never have been occupied. Mistakes of this nature may be avoided by consulting the board. A list of unoccupied farms in New Brunswick may be had on application to the Director, Natural Resources Intelligence Service, Department of the Interior, Ottawa.

How Farms May Be Acquired

The means of acquiring a farm offered by the province through the Farm Settlement Board should appeal to the man with limited capital only. This board has, at various times, bought available farms and will at any time purchase any other vacant farm that an applicant may desire—which it will resell to a purchaser at cost price, on the following terms: Twenty-five per cent of the purchase money, if the price being paid for the property purchased is less than one thousand dollars, but if in excess of that sum, then an initial payment of thirty-five per cent to be paid when possession is given to the purchaser, and the balance with interest at five per cent thereon, at such stated periods as the board may agree upon with the purchaser; the final payment must be made at a date not exceeding ten years from the date of the agreement to purchase, except that in special cases an extension of two years may be given by unanimous consent of the board.

The title to the lands so purchased by or granted to the board shall remain in the board until the purchaser has made all payments required by the agreement to purchase; but nothing shall prevent the board from selling to any purchaser for cash at any time, and from forthwith conveying the lands so purchased to such purchaser for cash.

Quite a large number of farms have found new owners under the auspices of the Farm Settlement Board, as the terms under which the farms can be acquired are so liberal, that a young man can readily earn his living and be paying for his farm while paying annually only such a sum as would, in the great majority of cases, be about the amount he would have to pay for rent alone.

The man who is without capital, or who has so little that he cannot afford to spend any part of it in acquiring a farm, can still obtain one of 100 acres under the provisions of the "Labour Act." Under this Act, the Lieutenant Governor in Council may cause suitable portions of the vacant Crown Lands to be selected for settlement in various parts of the province, and cause public roads to be made to and through such lands, and may have the said lands surveyed and laid off in one-hundred-acre lots on both sides of such road.

All lots so surveyed and laid off, and all other lots of Crown Land which have been surveyed and are open for settlement, shall be reserved for actual settlers, and shall not be disposed of to speculators or for lumbering purposes.

They shall be available to applicants upon the following terms:—

(1) Applicant must be a male of 18 years or over and must not be the owner of any land in the province.

(2) Not more than 100 acres will be allotted to any one applicant and the land must have been approved by the Crown as suitable for farming.

(3) The Crown retains the right to all minerals in lands which are granted, but mining rights can be obtained upon application to the Government.

(4) Applicant must actually live on the lot and cultivate it during the three consecutive years succeeding his allotment, but he may absent himself during the months of July, August, January, February and March.

(5) Applicant must within three years after allotment build a habitable house not less than 16 by 20 feet and clear two acres, and he must clear and cultivate not less than ten acres before receiving his grant.

(6) During the period of occupancy and before a grant will issue, applicant must perform \$30 worth of work upon the public roads or in lieu thereof pay to the Crown \$20.

(7) No timber shall be cut upon the lot until a grant is issued, except within the ten-acre tract selected for a homestead.

In addition to the above the following special regulations apply to the Blue Bell tract:—

(1) Applicant must pay one dollar per acre, twenty-five per cent on application and the balance in three annual instalments.

(2) Applicant must in the first year of occupation clear and grub three acres, in the second year plant and crop the three acres and cut down two additional acres; before the end of the third year erect on the lot a habitable house 16 by 20 feet.

(3) After the first instalment is paid, he may cut from the lot 20,000 feet board measure of lumber free, for building purposes only, and an additional 20,000 feet upon payment of stumpage duties.

So that taking matters all around, it is not difficult for any man, let his circumstances be what they may, to obtain a farm in New Brunswick. In New Brunswick one is in the midst of civilization, with neighbours, railway, school and church within a mile or so at most. The countryside is delightfully picturesque, well wooded and well watered. There are excellent markets for all the farmer can produce right at his very door, and any man who chooses to set to work in New Brunswick with determination and effort he will very soon find himself more than "making good."

Markets for Farm Produce and Conditions of Farm Life

In keeping with the other provinces of Eastern Canada, New Brunswick is experiencing a period of industrial and general development and prosperity with resulting large increases in local markets and food requirements, in addition to which the heavy ocean traffic from the winter port of St. John calls for large quantities of vegetables, fruits, and meat, poultry and dairy products.

The social, living and working conditions have undergone remarkable changes for the better. Improved methods and machinery have done much to remove the drudgery and supply the much needed interest that

hitherto was lacking. Rural customers consume no inconsiderable amount of current from hydro-electric power plants, the transmission lines of which now traverse many of the richest farming sections of the province. Electricity on the farm is being used for dwellings and barns, as well as power for operating the cream separator, the milking machine, pump, churn, washer, iron and vacuum cleaner. The general introduction of the telephone, almost every farm being on a telephone line, and of free rural mail delivery, the improvement of roads and the common use of automobiles, together with the improved railway facilities, have to a large extent removed the former isolation of country life and brought the rural people into much closer touch with each other as well as with the towns and cities or centres of population. General and agricultural education facilities as provided by the Provincial and Federal Governments have also greatly improved the position of the farmer and his family.

Women's Institutes and the Improvement of Living Conditions

In 1911 a Women's Institute Division was created in the provincial Department of Agriculture. Educating the farmer and the farmer's son and improving their conditions was not in itself sufficient, for similar opportunities for improvement and further education must be afforded the women of the farm before a true development of the whole agrarian circle could be obtained. With this object in view, women organizers, demonstrators and lecturers were sent to the rural districts to explain the objects and demonstrate the advantages to be gained by having a Women's Institute in the community. The objects were to improve the physical and ethical standards; awaken a desire for clean, well-arranged homes and healthful surroundings; raise the standard of efficiency in the management of home affairs; develop agriculture; promote educational, moral, social and economic measures; and encourage co-operation and community efforts.

At first, institutes were organized in a few communities, and these aroused interest in neighbouring localities. Thus the good work was spread until at the present time there are 107 branch institutes, representing some 4,000 women, working not only in the country but also in village, town and city. The work could not be confined to the rural districts, since the problem of the homemaker, both in populous centres and in the more sparsely settled districts, was similar, fundamentally. The institutes have fully realized the great scope of their work and already have achieved a great measure of success. Being a non-partisan, non-sectarian organization, an excellent opportunity is given to all sects and classes to come together upon mutual ground and to discuss matters common to all.

The first work taken up outside the home was the improvement of the schools. Sanitary conditions in and around the school buildings were investigated, and remedied wherever possible. In other cases, modern

equipment replaced that of many years' standing and provision was made for school gardens and fairs. Interest in public health and child welfare is displayed in many ways, probably the most outstanding being the presentation of scholarships for the training of Public Health nurses. In general, all in child life that tends to improve the physical standard receives generous consideration and support.



BEE KEEPING NEAR PERTH, VICTORIA COUNTY

New Brunswick bee keepers have an Association which purchases its supplies co-operatively. The industry has great possibilities of expansion.

More recently, a deep interest in community welfare and the establishment of community centres is being developed. Institute after institute reports the remodelling or equipping of a community hall, the erection of a building for community purposes, or the formation of plans whereby a certain community becomes the proud possessor of a centre from which to radiate the beneficial results of the community spirit.

Public improvements also receive the attention of the institutes. More than one village boasts of a new sidewalk, the installation of street lights, the erection of a public drinking fountain, the provision of a bandstand, the improvement of parks and public highways, through their efforts. Nor are members of the Women's Institutes averse to co-operating with other organizations. They are always ready and willing to assist in everything that tends to develop better citizenship. To encourage these

activities the Department of Agriculture, through its Women's Institutes, sends out graduates in household science during the summer months, to demonstrate and explain various lines of work such as cookery, sewing, home nursing, and house management.

During the winter short courses in household science, *i.e.*, classes in cookery, sewing, millinery, nursing and house decoration are held at different centres, thus bringing the practical benefits of scientific research and training direct to the homes of the people.

"For Home and Country" is the motto of the Women's Institutes, and they are proving themselves to be a powerful and increasing factor in the improvement of those social and living conditions upon which a nation's wellbeing and greatness is based.

Departments of Agriculture

Agriculture being the basic industry of the province, it is natural that the department devoted to its interests should be one of the busiest of the provincial service. The Department of Agriculture, with headquarters at Fredericton, and branch offices at Sussex, Moncton and Bathurst, aims to assist and guide farmers in the improvement of their methods of production and marketing, to encourage co-operation, and to better social conditions. It is headquarters in the province for information on all matters pertaining to farming, and both old and new settlers are invited to avail themselves at all times of the information so offered and of its extensive services. By so doing many farmers are meeting with more success in their work and safeguarding themselves against prejudiced or ignorant advice from other quarters. The new settler, particularly, may benefit through keeping in close touch with the department and obtaining its advice and guidance in locating and deciding on the farm to be bought.

The department is presided over by the Minister of Agriculture, who is assisted by the deputy minister and a staff of trained officials. The work of the department is divided into various branches or divisions, each of them in charge of specially qualified experts, and in this way the work of each division is clearly defined and duplication of effort is avoided. The various methods by which the department carries out its work are described in the annual agricultural reports, copies of which may be had on application to the office of the department, Fredericton.

The Dominion Department of Agriculture at Ottawa is also most active in furthering the industry in New Brunswick. An extensive experimental farm is conducted at Fredericton. All the activities of farm life are here carried on and experiments and tests are constantly being made in field and animal husbandry. The federal department embraces a number of divisions specializing on certain subjects, such as divisions of chemistry, economic botany and animal husbandry. The province enjoys the benefits of the results obtained from the work and experiments of these divisions.

Field Crops

New Brunswick agriculture is characterized by the successful production of a wide range of crops, the variety and nature of which should be sufficiently attractive, and the field for their production be large enough, for any intending settler.



CUTTING OATS NEAR CHATHAM, N.B.

Oats comprise New Brunswick's most important grain crop, with a very high average yield

As an example of the variety of crops grown and of the acreage devoted to each crop on a successfully operated general-crop and stock-farm (the owner being his own farm-manager), an inquiry at this farm, located at Sackville, elicited the information that the enterprises in 1920 were 7 acres strawberries, 1 acre bush fruits, 7 acres potatoes, 20 acres oats, 6 acres turnips, 80 acres hay; 9 horses and 30 head of cattle comprised the live-stock. One farm in Kent county produced 34 tons of air-dry hay from 8 acres, and 225 bushels of wheat from 4 acres. A farm in Carleton county produced 180 barrels or 495 bushels of Cumming's Pride potatoes per acre.

The principal field crops are oats, buckwheat, wheat, barley, potatoes, turnips, and hay. The 1923 production of these crops was approximately as follows:—

1923	Acres	Yield per acre	Total yield	Price	Total value
		(bushels)	(bushels)	\$	\$
Spring wheat.....	14,460	19·0	275,000	1·67	458,700
Oats.....	225,695	31·0	7,007,400	0·56	3,939,100
Barley.....	5,596	29·7	166,500	0·90	163,200
Rye.....	100	30·0	3,000	1·10	3,300
Peas.....	1,497	15·3	22,800	2·66	60,600
Beans.....	1,851	14·8	27,300	4·35	118,800
Buckwheat.....	43,010	25·0	1,075,100	0·85	909,800
Mixed grains.....	2,434	29·0	70,600	0·79	55,800
Potatoes.....	45,522	(cwt.) 132·7	6,043,000	1·00	6,023,000
Turnips.....	10,799	194·0	2,095,000	0·76	1,592,000
Hay and clover.....	555,105	(tons) 1·2	638,800	11·50	7,346,000
Fodder corn.....	3,876	10·0	38,800	5·00	194,000

Oats comprise the most extensively grown grain crop, with an average yield of about thirty bushels to the acre. Buckwheat is quite generally cultivated, much of it being used by country people for food as well as for stock-feeding. It does well on the lighter soils and gives a good yield on comparatively poor lands under the favourable climatic conditions.

Although the soils of many parts of the province are well adapted to the growth of wheat, the cheapness with which it had been produced up to the outbreak of the war on the vast prairies of the western provinces had an effect in deterring the farmer of New Brunswick from growing that crop; and for several years prior to 1914 its cultivation was almost abandoned in the province. Recently the Government has taken up the matter, recognizing the fact that wheat-growing, even though it may not be so immediately profitable as some other crops, is a feature of good agriculture, and that the province ought not to depend on other parts of the Dominion for its bread. To encourage the growth of wheat, the Government provides a handsome bonus towards the cost of construction of up-to-date roller mills in approved districts, where the wheat grown in those districts may be ground into flour, etc. A number of these modern mills are to be found in different parts of the province, and others are in course of erection.

Barley is not grown to any great extent, there being no opportunity to use it for malting purposes. As a food for fattening stock, barley is superior, and it may be hoped that farmers will produce larger crops of barley for feed. The acreage has doubled recently.

The happy combination of abundance of sunshine and plenty of moisture, without periods of drought or extreme heat, which characterizes the growing seasons, are ideal for the production of roots and vegetables of the highest quality, and consequently New Brunswick potatoes, turnips and garden vegetables have gained a reputation unsurpassed on the American continent.

Turnips are being sown in increasing extent, the ease with which they can be grown causing stockraisers to depend almost entirely on turnips and

hay for winter-feeding. Considerable quantities of turnips are shipped for table use to Boston and other New England markets, these coming almost entirely from Charlotte county and the St. John valley.

The potato is the most highly specialized of the field crops, the annual value of the crop being about ten million dollars on an average. The comparatively cool, moist climate keeps the potatoes growing longer and they are green and vigorous until the frost comes, hence their firmness, full starch content, good keeping quality and pleasant flavour. Their excellence both for edible and seed purposes has gained a high reputation for them in the large consuming centres of Canada and the New England States and



CLOVER FIELD AT FLORENCEVILLE, ST. JOHN RIVER VALLEY

Many farmers are going heavily into the production of clover seed for which there is a good market

also in the West Indies, in which places they find a ready market. They are also increasingly in demand for seed purposes in Ontario and in such states as Rhode Island, Virginia and New Jersey, where they have been found to give much superior yields to the locally-grown tubers. The average yield per acre is about 180 bushels. In the chief producing sections of the province, in the counties of Carleton and Victoria, crops of 100 to 130 barrels or 275 to 350 bushels per acre are commonly secured by the application of the best methods of culture. As a specialized crop on the general farm, the potato is decidedly profitable and constitutes an important, safe, and increasing part of New Brunswick agriculture. It fits in very well with apple growing, being particularly well suited for intercropping young orchards.

The same climatic conditions which are so favourable to the production of roots and vegetables are equally favourable to the growth of clover and grasses, and consequently there is an abundance of pasturage, and a large production of hay, a considerable quantity of which is baled and exported.

The growing of red clover for seed has lately received attention, quite a number of farmers harvesting an acre or two for seed. A few growers

have undertaken more extensive operations with much success and one farmer in Victoria county secured 3,500 pounds of seed from 25 acres.

Experimental planting of flax is now under way in Gloucester county in the vicinity of Caraquet, where it is believed that conditions are favourable to its growth and manufacture.

Live Stock

One of the greatest needs of agriculture in New Brunswick at the present time is more live stock of all kinds. Natural conditions are distinctly favourable, inasmuch as soil and climate, which produce all kinds of fodder crops of high quality in abundance, provide cheap raw material for the stock raiser and dairyman. There are thousands of acres of pasture land available for feeding purposes, and many thousands of tons of hay are sold off the farm annually which might be fed to better advantage to cattle or sheep. The following table shows the amount of live stock in the province for the last five years:—

	1918	1919	1920	1921	1922
Horses.....	66,590	77,828	76,737	69,958	70,152
Milch cattle.....	120,123	153,058	147,760	139,055	146,054
Other cattle.....	140,624	211,964	185,228	156,391	157,061
Sheep.....	140,015	212,745	280,090	236,951	236,031
Swine.....	79,814	104,939	92,925	89,337	85,260
Poultry (all kinds).....	675,412	796,698	753,234	743,405	1,251,496

During the last few years large amounts have been spent both by the province and by private individuals in importing animals of various classes from outside sources with the object of building up the quality of the live stock of the province. A few enthusiastic men of the younger generation have worked wonders in this direction during the last few years, and at the present time there are to be found many herds of high-class stock of various kinds. The Department of Agriculture is doing everything in its power to encourage the improvement in live stock and to this end pays large sums annually by way of bonuses to the various agricultural societies for the purchase of pure-bred sires for the use of their members.

The principal breeds of cattle for dairy purposes are Holsteins and Ayrshires, though several herds of the Channel Island cattle are also to be found. Of the beef-producing type the Shorthorn or Durham predominates. The great majority of cattle, however, are grades of one or other of these breeds. For practical farm purposes, many of these grades are very valuable in point of production, and it is not a difficult matter by using a pure-bred sire of the predominating breed of the grade to build up in time an exceedingly useful herd of animals.

At present New Brunswick depends largely on Ontario and Western Canada for its beef supply, although the abundance of well-watered grass

lands and cheap fodder should at least make it self-supporting. The production of beef is carried on to only a limited extent, as dairying is found to be more profitable, and for this reason the dairy breeds predominate. Straight beef-raising could probably be made profitable under proper management in some localities where lands could be cheaply obtained, but taking the province as a whole, it could not be compared in profit with the keeping of dual purpose or good grade Shorthorn cows, that would give from five to ten thousand pounds of milk each year and a calf that for our markets would make beef as profitably under three years old as one from a special beef cow. A modification of the two systems could be run to ad-



AYRSHIRE CATTLE ARE WELL ADAPTED TO NEW BRUNSWICK
Dairying is especially advantageous to the province, owing to near-by markets

vantage, perhaps, by allowing two calves to one cow, and saving the trouble of hand feeding the calf and of milking half the cows. There are some farms where there is a large amount of cheap pasturage, with access to unfenced areas where cattle could be run at some profit without paying any attention to the dairy end of it.

Horses of the finest breed can be raised in the province, but as yet there is not sufficient local demand for high-class draught horses to support the right kind of sires. A few progressive horsemen continue to import high-class stallions, even under these unfavourable conditions, and now receive some support through the enforcement of the new Stallion Act, which provides that no stallion shall be permitted to travel the country until he has been enrolled in the books of the department, which cannot be done until proof of his breeding and absolute soundness have been produced.

Pigs are kept on most of the farms and are easily and cheaply raised. The majority of the stock kept is grade Yorkshire, with some grade Chester and Berkshire. An excellent market for the whole carcase is assured by the large number of lumber camps, and there is a very good general demand for both bacon and salt pork. Hogs alone can use to best advantage

certain feeds and surpluses of crops, and because they multiply rapidly, are housed easily, feed economically, mature early, kill with very little waste and provide a food necessity which is consumed in enormous quantities, they therefore form an important part in mixed farming practice. Realizing this, the Department of Agriculture is encouraging the raising of swine through the establishment of Boys' Pig Clubs and by assisting and organizing the co-operative marketing of the finished product.

Sheep-Raising

While sheep-raising has been a more or less important industry in New Brunswick from the time of the earliest settlers, yet there has always been room for far greater numbers.

No province in Canada has a climate and natural conditions more conducive to the successful raising of sheep. Professor Brown, of the Ontario Agricultural College, made the following statement regarding the possibilities for sheep-raising in New Brunswick: "British Columbia excepted, you hold the only extensive and naturally suitable lands in the Dominion of Canada for the cheap production of wool and mutton. As a rough under-estimate there are now in New Brunswick and Nova Scotia some 2,000,000 acres of sheep runs, outside of the arable, bush, rock, water-meadow and the richer cattle grazing lands of the valleys. These should carry such a number as to produce annually—not to maintain, but to sell off each year—40,000,000 pounds of mutton and 20,000,000 pounds of wool. This is no wild speculative calculation but one based upon my own handling of the same subject in Scotland and Ontario and upon the experience of other Canadian flock masters."

However, notwithstanding these favourable natural conditions, fear of loss from the ravages of dogs, general lack of interest, and depressed market conditions caused the number of sheep in the province to decrease from 1911, until in 1917 they numbered 103,877, which represented a decrease of 100,000 in seven years. Faced by this discouraging decrease and realizing the great opportunities for sheep-raising which the province offered, the Provincial Government and Department of Agriculture took strong measures to revive the industry, and since 1917 the increase has been remarkably rapid and the number of sheep, according to estimates compiled in 1919, was 212,745, an increase of 103.84 per cent in less than three years. This large increase was due to the higher prices for wool, lambs and mutton, together with the active measures of Government assistance, which included the enacting of protective legislation, the importation of pure-bred sheep and the establishment of co-operative marketing of wool and lambs.

One of the greatest factors in recent improvement of the sheep industry is the work in wool grading and co-operative selling carried on under the auspices of the New Brunswick and Dominion Departments of Agriculture. It speaks well for the success of this work that the amount of wool graded

each year shows a substantial increase and the number of satisfied producers also continues to grow. A grading station has been established at Fredericton and arrangements made whereby any flock owner in the province may ship his wool clip to that point. Thus, wool is graded and sold direct to the manufacturers, netting the owner a much higher price, dispensing with the old method of sale, the flat price, and placing a premium on quality, thereby stimulating better care of wool and sheep.

With regard to the New Brunswick wool production the Dominion Bureau of Statistics furnishes the following figures for 1922:—

	No.	Lbs. wool	Value unwashed	Per lb. washed
Sheep.....	127,886	895,202	\$	\$
Lambs.....	108,145	432,580		
Total.....	236,031	1,327,782	0.19	0.26

The wool market afforded the sheep raiser is equal to any in Canada. He markets this product through the Canadian Co-operative Wool Growers, Ltd. This company handles, in the interest of the farmers, 5,000,000 pounds of the Canadian wool clip. In the past, the New Brunswick wool has graded higher than that from the western provinces, hence a higher price per pound was obtained. Freight rates in connection with the co-operative marketing are pooled, bringing the market equally close to the door of every sheep raiser. Prices received correspond with the highest market prices at Boston, which is the controlling market for America.

The large centres afford a ready market for lambs and mutton. St. John, the winter port of Canada, situated on the Atlantic seaboard, uses a large amount of mutton for home consumption and for provisioning the ocean-going liners. The surplus sheep are either butchered in the province and exported to Boston and New York markets or shipped alive in the fall to Montreal and Toronto. The sheep are collected and sold co-operatively by farmers' associations and the work supervised by the Provincial and Federal Departments of Agriculture, market prices, less shipping charges of approximately one cent per pound, being received by the patrons. The erection of the proposed abattoir and stock yards at a central location in the Maritime Provinces will greatly improve the present marketing facilities.

Although the present number of sheep is double that of a few years ago, the sheep-raising possibilities of the province have barely been touched. A higher class of sheep is now being kept as a result of the premium placed on quality by the advanced methods of marketing. The sheep industry was never on a stronger footing and it should make rapid advances.

Dairying

As long ago as 1890 an effort was made by the government of the day to stimulate the dairy industry by the establishment of co-operative butter and cheese factories on a bonus system. At that time the hand separator was little known and the inducements offered by the factories were such as to cause a continual increase in the number of patrons and also of factories, until 1903, when factory production reached its highest point with an output of 1,996,377 pounds of cheese and 895,086 pounds of butter. The last few years have again seen increasing production. The number of factories is less than half of those in existence in 1903, as many of the small country factories have been replaced by large, modernly equipped, central plants, to which are shipped the cream and milk of large territories which were catered to previously by several small factories.

Dairy farming is undoubtedly the system making for the greatest returns from the land in any particular year, while at the same time it not only maintains but even increases the fertility of the farm occupied. Selling the raw product from the farm is not good farming and is not profitable in the long run. A wider realization of this basic fact is gaining ground and will result in a more general adoption of dairying and resultant improvement in general farm practice.

The dairy industry of the province is capable of being largely increased and developed, the demand at the present time being considerably in excess of the production. Every year sees large importations from Ontario and the western provinces of both cheese and butter. Producers are thus assured of a ready market for fine goods at a fair price.

Climatic conditions are such as to make it comparatively easy to produce milk and cream of good quality, one of the first essentials in the manufacture of "first-grade" dairy products. During the summer months the weather is not excessively hot, the nights, as a rule, being especially cool, a condition very favourable for keeping milk and cream sweet. Rain-fall and moisture are usually sufficient to produce excellent pasturage, and most farms are well supplied with water from wells, brooks or springs.

The manufacture of cheese is carried on quite extensively in sections particularly well adapted to that phase of the industry, but the general conditions are more favourable to the development of the central co-operative creamery business, which usually embraces the manufacture of butter and ice-cream and the sale of table cream and buttermilk. While the districts are somewhat scattered, the railway accommodation, shipping privileges and the excellent system of public highways, make the collection of cream and its transportation to a central creamery comparatively easy.

In the matter of markets, New Brunswick dairymen occupy a favourable position. The demand is in excess of the supply and importations are handicapped by the "long haul" with its added freight charges. An

improved system of marketing has been introduced by the formation of a Cheese and Butter Board, with headquarters at Sussex. Here the buyers and salesmen meet at regular intervals and transact their business. All offerings are made subject to Government inspection and grading, which encourages the buyers to invest their money with every confidence.

An efficient system of practical instruction and inspection is maintained by the Provincial Dairy Division, whereby the factory and creamery men receive assistance in meeting the various problems and difficulties which they may encounter in connection with their work from time to time. Practical advice and help is also rendered the producer, which enables him to produce the best quality of raw material in the most economical manner. Cheesemakers, buttermakers and milk-testers are encouraged by free transportation to attend the Maritime Dairy School at Truro, which is maintained jointly by the Departments of Agriculture of Nova Scotia, Prince Edward Island, and New Brunswick.

Production of cheese factories and creameries was valued at over \$642,000 for 1923 made up as follows:

	Quantity	Value
Cheese.....	819,580 lbs.	\$ 162,262
Butter.....	1,119,295 lbs.	412,022
Ice cream.....	63,225 gals.	67,730

The centres from which these returns were made are:

Creameries—Sussex, Moncton. Fredericton, Albertine, Killam's Mills, Elgin, Petitcodiac, St. John, Jeffries Corner, Woodstock and Lower Millstream.

Cheese Factories—West Bathurst, Bellisle Creek, Millstream, Colline, Anagance, Sussex, Hammond Vale, Havelock, Head Millstream, Petitcodiac, Butternut Ridge, Penobsquis and Norton.

Poultry Raising

This is a young but growing industry in New Brunswick. Poultry work has usually hitherto been part of the daily routine of the farmer's wife. It is, however, rapidly assuming a much more prominent position, and is recognized as an essential part of well organized, diversified agriculture.

New Brunswick's climate is much more favourable to poultry production than is generally supposed. The average yearly production of pens of fowls entered in laying contests in New Brunswick compares very favourably with the production of pens in contests in other parts of Canada and in the United States. Poultry keeping can be made profitable if proper methods are employed. The relatively late spring somewhat delays natural hatching processes, but the remedy lies in artificial incubation, and each year shows an increased tendency on the part of poultry producers to provide themselves with greater incubator capacity.

Land suitable for poultry-raising is available in practically all sections at very reasonable prices. Lumber for house construction is not expensive, and a sufficient variety of suitable grains to make a complete grain ration can be grown in most sections. The combination of poultry-raising and fruit-growing or mixed farming offers especially striking inducements. There is no immediate danger of over-production, since at present large quantities of eggs are imported from other provinces and from the United States at certain seasons of the year to provide for the shortage on local markets.

When the production of poultry and poultry products has reached a point where there is a surplus New Brunswick's geographical position is a distinct advantage over the other provinces in connection with Canadian export trade with European countries. During the season of 1923 Canada exported over 3,600,000 dozen eggs, a large percentage of which went to European buyers. St. John is one of the nearest Canadian ports to this market. Practically all the settled portions of the province are within easy access to this port. St. John also serves as a convenient shipping point to the large consuming centres of the Eastern States and to the West Indies. The various steamship lines operating from St. John require enormous quantities of poultry and eggs for their ocean-going vessels. At present, even these are secured from points farther west, particularly Toronto and Montreal.

Reliable statistics regarding the number of poultry in New Brunswick are difficult to obtain, but it is safe to say the number of fowls, exclusive of turkeys, ducks and geese, now numbers over one million. Poultry raising is the only branch of live stock which shows a large and consistent increase in numbers over a period of years. However, the average farm flock does not exceed 20 to 25 birds, which number may be increased three or fourfold before the industry will have assumed the proportions its importance justifies.

New Brunswick is rich in lakes, rivers and brooks. These provide admirable conditions for the raising of ducks and geese, which are among the most remunerative of farm products. The great number of farms bordering on the innumerable water bodies of the province have choice feeding grounds for birds of this class. Under such conditions a flock of 40 or 50 water-fowl may be raised practically free of cost.

Turkeys are raised extensively in some sections. Their natural foraging inclinations may have unrestricted freedom on the average New Brunswick farm without the destruction of other crops. A few pure-bred flocks exist which had their origin in stock imported by the Poultry Division of the Provincial Department of Agriculture, and these serve as distributing centres of first class breeding birds. The number of turkeys being kept has greatly increased during the last two or three years.

During the seasons of 1918 and 1919 the Provincial Government imported nearly 50,000 hens' eggs for hatching, of the highest laying strains available, and distributed them to boys' and girls' poultry clubs and other breeders throughout the province. The effects of the stock distributed can be noted over the entire province. The club work has been continued and more recently the Department of Agriculture has undertaken the distribution of large numbers of pure bred Barred Plymouth Rock cockerels



A TYPICAL PROSPEROUS FARMING VALLEY IN NEW BRUNSWICK

The uplands form excellent sheep pastures and there is room for enormous further expansion in the sheep breeding industry of the province.

of high laying strains. This will further the standardization of New Brunswick poultry.

The unprecedented development of poultry culture during the past two decades is one of the outstanding features of Canadian agriculture. The present status of the industry was scarcely dreamed of at that time. New Brunswick will share in the developments of the next decade if her farmers and poultry raisers vigorously uphold the principles of standardization and modern methods of increased production and stock improvement.

Bee-keeping

There is evidence to show that bees have been kept in New Brunswick since its earliest settlement, but little Government attention was given until the fall of 1917, when an appropriation sufficient to pay the salary of

an apiarist was provided. Since that time the interest in bees and honey has greatly increased. Nearly every bee-keeper has been visited and instructed in the use of modern equipment and methods. In the spring and early summer months, beginners are given especial assistance. These improved methods have been adopted by many bee-keepers all over the province, with the result that there has been a large increase in the average annual production within recent years.

Clover is the principal source of the honey flow, but this is supplemented by fall flowers of the golden rod and aster types and many others of lesser importance. In the northern counties, fireweed or great willow herb abounds in the newly-settled sections and supplements the flow from white and alsike clover.

A hive on scales at the Dominion Experimental Farm, Fredericton, in 1919 registered an increase of 58 pounds in four days as follows: June 24, 11 pounds; 25, 21 pounds; 26, 16 pounds; 27, 10 pounds. The average crop per hive in 1923, as reported to the Department of Agriculture from over 100 apiaries, was 57 lbs., but there was one verified report of a yield of 2,387 lbs. from 9 hives. The total number of bee-keepers listed is well over 700. The output for the province in 1923 was valued at approximately \$50,000.

Because of better grading the product placed on sale has been very greatly improved.

Most of the bees in New Brunswick are wintered in cellars, but where cellars have given unsatisfactory results, they may be wintered in packing cases on their summer stands.

New Brunswick bee-keepers have an association which, in 1923, had a membership of one hundred and forty, and which purchases its supplies co-operatively.

Fruit-growing

It would appear to be a most opportune time to extend the planting of apple trees in New Brunswick, where very favourable conditions for the culture of showy desert apples are to be had. Keen horticulturists are taking advantage of the present low cost of suitable land to increase and improve their orchard holdings.

It is altogether probable that for some years to come Canadian markets will consume the small surplus of New Brunswick apples with the most profit and to the best advantage. The increased production of the future will probably to a large extent be marketed in Europe, and it is gratifying to note some marked advantages which this province has in catering to such a trade. These apple lands being from 800 to 3,000 miles closer to the European markets than the large producing sections to the west, not only is the cost of transportation less, but the fruit can be placed in the consumer's hands in better condition and with less difficulty. Added to these advantages is the relatively low price of land in New Brunswick

and comparative cheapness of production, so that even should the other apple sections of the North American continent increase their exportable surplus, the prospects for commercial orcharding in New Brunswick would still be bright.

Convincing evidence of the adaptability of the soil and climate to the production of apples is furnished by the abundance of wild apple trees growing on the roadsides and in fence corners. The soil of the chief fruit

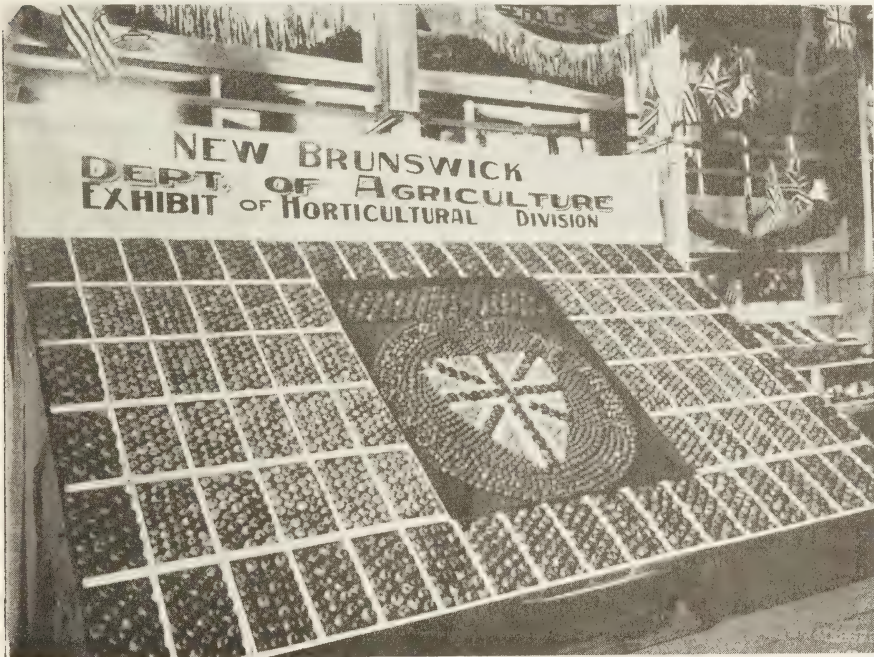


EXHIBIT OF NEW BRUNSWICK APPLES

There is ample opportunity and excellent prospects for an increase in the apple output of the province

lands is for the most part a clay loam, with a medium to a gravelly subsoil, having the requisite depth for the penetration of the roots, being easily worked, affording good natural drainage and holding the heat well, four essentials in apple-growing.

The springs are not very early, and operations do not begin on the land till the middle of April, or later, In fact, to quote the late Mr. Francis Sharp, of Woodstock—the great pioneer of apple-growing in New Brunswick: “The province, as compared with England and the rest of Europe, has no spring. As soon as the winter is over summer is at hand. Our prevailing wind is west and northwest and as long as the vast body of land lying to the north and west of us is covered with snow, no amount of weather warm enough to develop growth is possible. These winds keep back our spring long after the same latitude in England, nursed by the mild breezes

of the wide Atlantic, has started into growth. When the snow to north and west of us disappears, spring bursts upon us with a warmth defying all frosts which would cause the failure of the apple crop." The summer climate, while affording abundance of sunshine and heat for the proper growth and maturity of the apple and other fruits, is yet remarkably free from the prolonged dusty, dry spells and hot murky nights too often experienced farther west. The rainfall, too, is ample, precluding any necessity for irrigation, as good cultivation will always carry the growth of crops through any period of drought yet experienced.

One advantage that New Brunswick apples possess lies in their high colour and singular beauty of appearance. These two points alone would ensure a ready sale, were even quality lacking, but fortunately the varieties of apples raised to the best advantage in the province are all of high quality, Wealthy, Dudley, Fameuse, McIntosh Red, Golden Russet and Northern Spy being among the best of dessert apples. The Duchess, Wolf River, Milwaukee, Alexander, and Bethel also grow exceedingly well and find a ready sale.

Regarding quality, Mr. W. T. Macoun, Dominion Horticulturist, speaking at the banquet of the New Brunswick Fruit Growers' Association, on November 1, 1911, stated that "Nowhere in all Canada is the McIntosh Red apple being raised to greater perfection than in the province of New Brunswick." This in itself is most convincing evidence since the McIntosh Red is considered by many people to be the best dessert apple grown in Canada.

That New Brunswick apples compare very favourably in all round quality with those grown in the larger and more noted apple sections of Canada is evident from the success of the New Brunswick fruit at the First Daily Mail Imperial Fruit Show, 1921, held in London, England. In competition open to all Canada the four entries from New Brunswick were awarded two first, two third and two special prizes. Again in 1922 at the Royal Agricultural Winter Fair, Toronto, New Brunswick apples were awarded eighteen prizes.

MARKETING OF THE CROP

About one-third of the crop is sold on an f.o.b.-orchard basis for shipment to Montreal, where it commands full market prices. Barrels cost about 60 cents each and the freight charge is 83 to 88 cents to Montreal. Local market prices for No. 1 grade Fameuse and McIntosh varieties are usually 7 to 8 dollars with Bethel, Golden Russett and Bishop Pippin about 2 dollars less. In 1923 Fameuse and McIntosh apples, being a very light crop, brought the record price on the local markets of \$10 per barrel for the first grade.

PRODUCTION AND COSTS

The annual production of apples is understood to be about 50,000 barrels, of which one-third of the commercial production is from new orchards just coming into bearing. The acreage of new orchards is over half the total, so that commercial production should increase materially within the next few years. Cost of production, including packing for shipment, averages around \$2 per barrel.

The profit possibilities of apple growing was clearly brought out in a series of demonstration tests by the Provincial Agricultural Department in 1911. It took over three run-down orchards in the counties of Albert, Sunbury and York, respectively, and operated them for three years to show what could be done, with the result that the average annual profit per acre in three orchards over the three-year period was \$132.27.

SITUATION OF FRUIT LANDS

In point of land available, range of varieties profitably grown, and marketing facilities, the lower St. John valley constitutes an important section. Acknowledged to be one of the most fertile and beautiful valleys in the world, it awaits only the systematic development of its fruit lands to rapidly blossom forth into one of the best apple valleys in all Canada. Since no definite soil survey has ever been made through this country, it is impossible to state how many acres of first-class fruit lands it contains. Suffice it to say that along the river much of the land has an admirable slope and is excellently adapted for apple-growing. Some of the soil farther back is also first-class, and considerable areas of excellent apple land are to be found even twenty miles or more from the river.

There are also many acres of high intervale land, in the vicinity of Sheffield and Maugerville, which would yield handsome returns if planted to apples. The soil is a dark loam, several feet deep, and is exceedingly fertile, being the old river bed. Here may be seen apple trees nearly 100 years old, still strong, thrifty, and bearing fruit. Farther inland, back on the highland around French and Maquapit lakes, are areas of soil similar to that on the western bank of the river—much of it first-class apple land, and still more of it in the Grand Lake region and farther south in the sections bordering Washademoak lake and Belleisle and Kennebecasis bays.

The upper St. John valley, between Fredericton and Woodstock, while not adapted to such a wide range of varieties as may be produced below Fredericton, has proved itself adapted to the production *par excellence* of early or mid-winter fruit, and at Woodstock, 160 miles from St. John, there may be found to-day the relics of the old Sharp orchards—apple trees planted in the tens of thousands by Francis P. Sharp, one of the most noted horticulturists in America. These orchards in their prime were the wonder and envy of all who saw them, and their produce sold for higher prices on the Boston market than locally-grown fruit. With the death of Mr. Sharp

these magnificent tributes to the productive powers of New Brunswick's soil and climate gradually fell into decay.

Little is known at present of the amount of land available in the country embraced in the upper St. John valley; but as the St. John Valley railway is now completed between Centreville, Woodstock, Fredericton and Gagetown, a distance of about 120 miles, skirting the west bank of the river, between these points, large blocks of first-class fruit land situated between Woodstock and Fredericton, and hitherto unattended by direct steamship or railway service, are now within easy communication of the social and marketing advantages possessed by the lower St. John valley.

In some respects portions of Albert county present conditions akin to those of the famous Annapolis valley in Nova Scotia, and produce to-day specimens of the Gravenstein, the Northern Spy, Ribston Pippin and other apples, the equal in flavour of the Nova Scotia product. Undoubtedly there is a very bright future ahead of this district in apple-growing, as the proximity of the thriving town of Moncton, with its 18,000 people, and Canadian National Railway headquarters, together with the tempering influence of the Petitcodiac river and the water communication of the bay of Fundy, are strong points in its favour.

In the southern part of Charlotte county, in the vicinity of St. Stephen and St. Andrews, and notably in the lower valley of the St. Croix river, the milder climate is more favourable to the production of the more tender varieties, such as King of Tompkins, Northern Spy and Rhode Island Greening, and good possibilities in commercial orcharding in that section await development. It is fed by two branches of the Canadian Pacific railway and a line running direct to St. John. It also has a splendid outlet for its product by ocean transportation to St. John, and thence to all parts of the world.

At Chartersville, Westmorland county, four miles from Moncton, is to be found the large orchard of Mr. Roy Charters, in which over thirty different varieties of apples are grown successfully. At Shediac cape, right on the Atlantic waters, and almost on the border between Westmorland and Kent counties, on a beautiful piece of level land, lies one of the largest bearing orchards in New Brunswick—planted and owned by Welling Bros. There are over 2,000 trees in this orchard, mostly apples and plums, with some pears and cherries. Mr. Welling has grown on the place over seventy different varieties of tree fruits—a wonderful testimony to his ability and the adaptability of this section to fruit production. These orchards are but two of the many throughout the county, but they serve to indicate the future prospects for apple-growing in Westmorland and Kent counties.

SMALL FRUITS

To quote the words of Mr. Bunting, the Dominion fruit expert: "No finer strawberries, raspberries, or other small fruits are grown anywhere in the Dominion."

In addition to supplying the local markets, a considerable trade has been developed with Montreal, New Brunswick strawberries maturing and being placed on that market after the Ontario and Quebec berries are over. In this connection we quote from the report of the Provincial Horticulturist for 1923:—

“There was a relatively large increase in the bearing acreage of strawberries in 1923. The plants wintered well and the yield was generally good, resulting in the largest crop ever recorded in the Province, the total



PICKING STRAWBERRIES NEAR SUSSEX, KINGS COUNTY

New Brunswick strawberries reach perfection just as the Ontario crop is over and so can always command a favourable market.

production being, approximately, from 1,100,000 to 1,250,000 boxes. The average selling price was much lower than in 1922 or for some years, but may be expected to be higher next year.

“According to information supplied by Dominion Fruit Inspector W. P. Fox, some 614,000 boxes of strawberries were shipped by express from the Sackville district, much of this going to Montreal, Boston and New York. Sackville is the heaviest strawberry producing area in the Province.

“Mr. W. S. Potts, Dominion Fruit Inspector at St. John, has supplied the following statement of arrivals and prices of small fruits in that city for the season of 1923:—

	Quantity 4-5 boxes	Opening price	Closing price	Average price	Lowest price
		cts.	cts.	cts.	cts.
Strawberries.....	454,363	45	25	10	6
Raspberries.....	6,390	24	22	17	15
Blueberries.....	14,708	20	13	13	10
Gooseberries.....	900	20	20	20	18

Raspberries, blackberries, gooseberries and currants are grown successfully, there being a demand for considerable quantities to supply local markets. The difficulty of getting raspberries and blackberries to outside and distant markets prevents any large increase in the cultivation of these crops at the present time. Wild raspberries, strawberries, blueberries and cranberries grow in abundance. Blueberries grow wild in enormous profusion and are canned in large quantities. They are also sold on the local markets and exported to some extent in the fresh state. Good express service to Montreal is now provided at the special rates of \$1.60 to \$1.70 per 100 pounds.

FORESTS*

From early times the forest products of New Brunswick have held a first place in its exports. Although a large section of the province is admirably suited to agriculture, lumber has remained pre-eminent. The settled districts are, as yet, confined principally to the river valleys and the coast line, the interior forming a vast timbered area. Of the 17,500,000 acres in the province about 7,500,000 acres are Crown lands and are mostly timbered.

As the province is everywhere drained by large rivers, with innumerable branches, lumbering can be carried on advantageously wherever there is timber, as from all points in the province logs can be driven down these waterways to the mills.

Although much of the forested area of the province has been cut over, and some portions badly burned, yet there is a great stretch of Crown lands in the interior, north of the Southwest Miramichi, 80 miles wide and 100 miles long, without a habitation of any kind except the lumberman's or trapper's shanty. This great area is fairly free from the ravages of fire and is covered with many species of valuable timber. The greater part of this territory is unfit for cultivation, lying on a granite and boulder formation, although the northern section, in its approach to the Restigouche river, runs into the Upper Silurian formation and consequently has better soils. Everywhere in this belt both black and white spruce abound, some pine, large quantities of the finest and largest cedar in Eastern Canada, and vast amounts of hardwoods that have scarcely been touched. New Brunswick has in these, and in her other forested areas, a heritage that, with proper conservation, will remain for all time a great source of revenue.

Forest Survey

The province is undertaking an extensive forest survey, or stock-taking, of her timber and soil resources. Work on this survey was begun in 1916 and at the close of 1923 about sixty per cent of the Crown lands had been mapped and estimated, according to the most modern system, by the staff of foresters employed by the Provincial Government. In

* Much of the material in this section was furnished by the Department of Lands and Mines, Fredericton.

this survey all lands fit for agriculture are noted and classified, quantities and distribution of forest species are ascertained, and the accessibility of timber and the improvements of streams that may be required to increase driving facilities are estimated. One of the notable features of the survey is the running of block lines by deputy land surveyors through the forests and the establishment of posts along these lines, properly marked so as to be readily used by the woodsmen in their work of locating logging operations.



UNLOADING LOGS ON RIVER BANKS

During the winter the logs are brought out of the woods to the banks of the streams for floating down in the spring.

A brief summary of the 4,477,794 acres compiled at the time of this report is as follows:—

Softwood forests.....	46.5%	or	2,083,835 acres
Mixed hardwood and softwood forests.....	35.1%	"	1,572,581 "
Hardwood forests.....	3.3%	"	147,959 "
Total area merchantable forests.....	84.9%	"	3,804,375 "
Burnt-over lands.....	10.8%	"	481,856 "
Barrens, bogs, swamps, lakes, clearings, etc.....	4.3%	"	191,563 "
	100.00%	"	4,477,794 "

The amount of timber on the timbered area shown above is estimated as follows:—

Merchantable softwoods (spruce 12" and over, cedar, white and red pine, hemlock 12" and over, jack pine 10" and over, fir 9" and over).....	3,445,000,000bd. ft. or 18.3%
Hardwoods (yellow birch, maple, beech, 12" and over, white birch, poplar 8" and over).....	3,086,000,000 " " 16.4%
Total merchantable.....	6,531,000,000 " " 34.7%
Undersized softwood (down to 6" stump).....	7,671,000,000 " " 40.8%
Undersized hardwood (down to 6" stump) including cordwood material.....	4,609,000,000 " " 24.5%
Total undersize.....	12,280,000,000 " " 65.3%
Grand total.....	18,811,000,000 " " 100 %

The above estimate is from an area covering 59.7% of the Crown lands which are estimated at 7,500,000 acres.

The proportion of each species in the estimate of merchantable timber shown above is as follows:

Black, red and white spruce.....	27.71%	Yellow birch.....	14.79%
Fir.....	9.71%	Maple.....	7.71%
White pine.....	3.74%	Beech.....	2.22%
Red pine.....	.66%	White birch.....	16.35%
Cedar.....	7.84%	Poplar.....	5.06%
Hemlock.....	2.03%	Ash.....	1.04%
Jack pine.....	1.05%	Other species.....	.19%

Opportunity in Hardwoods

An outstanding opportunity for future exploitation is in the hardwoods, of which the province has vast areas that have been little developed as yet. Hardwoods are not so readily logged and cannot be floated down stream as satisfactorily as can softwoods. Their uses are also more limited. Many species, particularly maple and birch, are very valuable, however, and efforts are being made to attract hardwood industries to the province. These are meeting with the success which the movement deserves, and the hardwood stands, much of which are suitable for flooring, furniture, turnery, railway ties, etc., are being increasingly utilized. One company cuts annually about 3 million board feet of hardwood logs, mainly maple, for use in the manufacture of last blocks. The large stands of poplar invite the establishment of soda pulp plants for paper manufacture. Recent developments are the establishment of a large creosoting plant for the treatment of hardwood railway ties, and the export of hardwood lumber to the West Indies. Considerable yellow birch logs are being cut and exported for veneer.

The softwood cut, is used wholly for lumber and the paper industry, and the demand constantly exceeds the supply. There is great room for expansion through the development of water power and the erection of mills to convert the raw pulp material into finished paper. At present large quantities of pulpwood and pulp are exported to outside mills when they could be advantageously treated in mills within the province.

Utilization of Waste Products

In these days of scarcity and high prices the subject of the utilization of waste products assumes unusual importance. Chief among such substances that are worthy of investigation are sulphite liquor from pulp plants, and sawdust and small pieces of wood from saw-mills. From the two former, processes for the manufacture of industrial alcohol have been worked out, and from the latter such articles as spools, brush backs, handles, etc., and, by distillation, charcoal, wood alcohol, acetic acid and acetone.

Administration

Previous to 1918 it was the custom to employ scalers and rangers during the winter season only, or when the lumber was being cut in the woods, but under the new Forest Act permanent rangers have been

appointed who are on duty the entire year. These rangers have charge of scaling all lumber cut from Crown lands, the enforcing of logging regulations, the prevention of forest fires and the protection of game.

It is estimated that New Brunswick will receive \$1,323,000 in revenue from the forests during the fiscal year 1924. This includes revenue from stumpage, bonuses, ground rental, fire tax, sale of game licenses, and other minor sources, all of which is included in territorial revenue. This figure



NEW BRUNSWICK LUMBERING INDUSTRY

The Robinson sawmill at Washademoak. Permanent and portable sawmills are to be found throughout the province

shows a wonderful increase in the amount of revenue received by the Government of New Brunswick during the last decade, and compares favourably with the revenue received from forests in other provinces.

Production

In 1922 the invested capital of the lumber industry was \$27,356,356, and in the pulp industry \$16,310,932. There are now five pulp mills and one paper mill in operation.

That forestry operations have already contributed heavily to the wealth and revenue of the community is revealed in the statistics for 1917 to 1921 (five years' average).

	Quantity	Value
Lumber.....	463,899 M. ft. B.M.	\$ 13,235,128
Lath.....	169,164 M. pieces	810,890
Shingles.....	236,106 M. pieces	882,363
Pulpwood.....	334,576 cords	3,693,548
Total.....		18,621,929

This does not include wood used by settlers, which would add substantially to the above production. The cut in 1923 was 221,870,358 superficial feet, of which part was budworm-killed timber. The demand for New Brunswick lumber remains fairly stable at the present time, while the heavy operations of portable mills indicate a brisk demand for lath and small dimension timber. It is estimated that the cut for 1924 will be in the vicinity of one-half billion feet, of which one-half will be fire or budworm killed.

New Brunswick shows the heaviest cut in balsam fir of any of the Canadian provinces, while she stands second in spruce and third in white pine, cedar, red pine, tamarack and basswood.

The kinds and value of pulp produced in 1922 were:

	Tons	Value
Groundwood.....	6,879	\$ 201,712
Sulphite, bleached.....	47,898	3,758,007
Sulphite, unbleached.....	27,221	1,388,637
Sulphate fibre.....	16,583	846,516
Screenings.....	1,169	10,440
Total.....	99,750	6,205,312

Pulpwood used by the five operating pulp companies amounted to 205,000 cords, out of a total cut of 350,000 cords of which half was spruce and half balsam fir, valued at \$10.19 per cord. It is understood that production has since increased. The first paper mill was put in operation in 1923.

Fire Protection

It has been the policy to concentrate on fire prevention as much as possible. The losses through settlers' brush fires have been reduced and practically controlled through supervision of burning by wardens, no burning being allowed without a permit or in hazardous weather. A penalty of \$200.00 is provided. The law also requires that all forest travellers must register with the fire warden between May 1st and November 1st, and receive a certificate of registration. This certificate states where the applicant is going, and the period he intends to stay. In periods of dry weather, such as occurred in 1923, the forest is closed to all travel and the registration certificates cancelled. The fires resulting from the carelessness of fishermen and pleasure seekers in the woods have been greatly

reduced since this certificate clause was put in force. Fire signs are posted throughout the forest and large road signs are posted on the highways to warn the tourists about fire.

A fire inspector is maintained to inspect all locomotives operating within the province, so that the required fire protective appliance may be kept up to standard, and to see that the necessary patrols are maintained by the railway in the forested sections. All industrial operations, such as



A RIVER OF LOGS
Thirty million feet of timber on the Miramichi River.

sawmills, operating within one-half mile of forest land are required to keep screens of a certain standard gauge in the smokestack and refuse burners.

Once a fire has started it is essential that it be detected as quickly as possible so that it may be reached and extinguished while yet small. The interior part of the province contains an extensive area of forest land in which few people travel, so that fires once started might burn for some time before being located. The Forest Service is going ahead with the construction of lookout stations on outstanding peaks where a large area of forest land may be viewed. These stations are connected by telephone and fires are located by fire finders and outside points advised by telephone of the exact location of the fire by the lookout man a few moments after it is detected. Twelve lookouts will be in operation during the present season, 1924. Many private land-owners have co-operated with the Forest Service in the construction of several of the towers so that many overlook private as well as Crown Lands. More towers are being constructed.

Patrols are also necessary. The fire rangers during the dry season are continually patrolling their respective districts. Special patrols are maintained on railways, following behind trains and putting out fires shortly after being ignited. Aeroplanes when finally standardized promise to prove especially useful in this service, providing a means to cover great areas in a short time, to discover from the air fires a great distance away, and to summon assistance quickly. The numerous streams and lakes of the forested areas afford suitable landing-places for seaplanes. Proper fire-fighting equipment is maintained at convenient points, including portable fire-pumps with 1,500 feet of one and one-half inch hose each. These can be carried by two men through the woods, and have proven very effective for the extinguishing of fires in old stumps, saw-dust piles, etc.

County councillors and woods foremen in the employ of private lumber companies have authority to act in case of fire the same as wardens. This co-operation of the lumber companies has brought splendid results. In addition road supervisors are instructed to act in case of fire and use their road crews for this work.

Each year the Forest Service has conducted extensive educational campaigns through the aid and co-operation of the Canadian Forestry Association, the Fire Prevention Board, the various clubs and institutions within the province. The schools, churches, women's institutes, Boy Scouts, Rotary Clubs, etc., are all reached with lectures and publicity matter relating to forest conservation, while the newspapers contribute considerable space to the subject in the fire season.

MINERALS AND MINING*

Investigation has shown that New Brunswick is a territory of favourable mineral prospects. All the geological divisions from Pre-Cambrian to Triassic are represented, while those formation such as the Laurentian, Huronian and Cambrian, which elsewhere are usually most productive of metallic ores, and the Carboniferous formations yielding coal and related products, are among those which occupy the largest areas. Moreover, the former have generally been subjected to profound disturbance and metamorphism, conditions most favourable to the occurrence in them of useful minerals. More than twenty-five minerals of economic importance have been discovered throughout the province and many of them have been worked.

The mineral development of New Brunswick is backward, however, the total value of the mineral production for 1923 being only \$2,205,846. That actual mining has not developed to the extent that geological indications warrant is probably due to the general concealment of the rocks by forests, which makes discoveries difficult, so that very little of the province has been prospected. New Brunswick should yet prove a source of great

*Revised by the Department of Mines, Ottawa, and by the Department of Crown Lands, Fredericton.

mineral wealth. At present, activities are restricted mainly to the mining of bituminous coal, the quarrying of gypsum and stone, and the production of lime and natural gas.

Coal Widely Distributed

Coal is found at several places in the broad carboniferous belt, extending westward from the coast in Albert and Kent, through the counties of



GYPSUM IS BOTH QUARRIED AND MINED

Photo shows entrance to tunnel in underground workings and how the product is handled.

Kings, Queens, Sunbury and York, notably near Minto, Grand lake district, at Beersville, on the coal branch of the Richibucto river, and at Dunsinane, thirty miles southwest of Moncton, but it is worked economically only in the vicinity of Minto. Here the seams run from sixteen to thirty inches in thickness and are found at various depths down to 120 feet.

Some of the coal is so close to the surface that it is mined by simply stripping the earth cover by means of steam shovels. This process, carried out carefully, adds materially to the production of coal and has been found to be economical. Unless considerable care is exercised, however, there is danger of taking earth or rock with the coal. A very effective method used by one of the operators is to remove as much earth as possible with the steam shovel and then scrape off the remaining foreign matter by hand. For underground work the room and pillar method is generally adopted.

Since the construction of a railway to Minto in 1914 and the organization of companies with long term leases and a large tract upon which to work, this industry has become important. The following figures give the production of marketable coal from 1912 to 1923, inclusive, with values:—

Year	Short tons	Value
1912.....	44,780	89,560
1913.....	70,311	166,637
1914.....	98,049	241,075
1915.....	127,391	309,612
1916.....	143,540	386,016
1917.....	189,095	708,010
1918.....	268,212	1,331,710
1919.....	179,108	794,761
1920.....	166,048	1,055,286
1921.....	187,192	920,666
1922.....	287,513	1,107,643
1923.....	276,603	1,064,922

That over 235 million long tons of coal of a good steam-producing quality were to be found in the Minto basin, was the statement of W. S. Dyer, speaking before the Canadian Mining Institute at its last annual meeting after spending the summer of 1923 investigating the region. The Dunsinane and Beersville areas are estimated to contain 13 million tons.

Gypsum Resources are Important

Gypsum ranks next to coal among the important minerals of New Brunswick. It is intimately connected with the building industry, large quantities being used in the manufacture of plaster of Paris and gypsum cements, for mortar and architectural decoration. It is also used as a "retarder" in Portland cement. The finer qualities of plaster of Paris are used for pottery moulds and for modelling. In a coarse form gypsum may be used as a fertilizer, on account of its action in promoting nitrification, of liberating potash from the double silicates of the soil, and of minimizing loss of volatile ammonia from stable manure. When finely ground it forms an ingredient of paints, and it is occasionally used as an adulterant of white lead. It is used to a considerable extent for loading paper and in "finishing" cotton and lace goods.

Gypsum is found in several localities. It is quarried at Hillsborough and part of the production made into plaster there by the Albert Manufacturing Company, who have the largest and best equipped gypsum products plant in the Dominion. Owing to excellent water transportation facilities, considerable quantities of crude gypsum are exported to mills in the United States.

Production figures for the years 1913 to 1922 inclusive are as follows:—

Year	Tons	Value
1913.....	103,954	\$279,395
1914.....	79,083	200,680
1915.....	74,501	184,929
1916.....	39,546	153,064
1917.....	38,556	191,631
1918.....	27,225	214,114
1919.....	42,409	315,656
1920.....	49,405	428,183
1921.....	54,030	360,220
1922.....	82,462	517,668

Current production is over 100,000 tons annually.

Impure gypsum, such as that at Plaster Rock, occurs in considerable quantities and has been found useful as a fertilizer. Anhydrous calcium sulphate or anhydrite is also found in large quantities, but no use for it has yet been discovered.

Natural Gas and Oil

All the natural gas and petroleum produced in New Brunswick comes from the Stoney creek district, south of Moncton. Production of both gas and oil has increased in recent years and has been of great benefit to Moncton and vicinity, where the gas is largely used for power, domestic heating and lighting purposes. The future of the gas supply depends upon the discovery of new producing areas since the ones now being worked show signs of depletion. Considerable exploration has been carried on.

NATURAL GAS PRODUCTION 1915-22.

Year	M. cu. ft.	Value
1915.....	430,692	\$ 60,383
1916.....	610,118	79,628
1917.....	796,775	103,735
1918.....	792,396	107,842
1919.....	682,890	120,510
1920.....	682,502	130,506
1921.....	708,743	139,375
1922.....	753,898	148,040

PETROLEUM PRODUCTION, 1915-22.

Year	Bbls.	Value
1915.....	1,020	\$ 1,423
1916.....	1,345	2,663
1917.....	2,341	5,460
1918.....	3,009	7,402
1919.....	4,225	13,141
1920.....	5,148	19,963
1921.....	7,479	33,022
1922.....	7,778	32,732

Bituminous or oil-shales exist extensively in Albert and Westmorland counties near Moncton, but as yet have not been worked commercially. These shales are richer in oil and by-products than the Scottish shales which have been operated very profitably for many years. The quantity of rich shale has been estimated by several mining engineers at as much as 270,000,000 tons. Retorting would have to be undertaken on a large scale in order to be profitable, but under these circumstances the prospects appear favourable.

Other Minerals

Tungsten (wolframite) was discovered a few years ago on the South-west Miramichi river, about twenty miles above Boiestown. The property has been worked on a small scale and a certain quantity of concentrates shipped out, but owing to limitations in the plant, its inaccessibility, not being near a railway, the condition of the market and other difficulties, the plant is not now being worked. There evidently was no lack of ore of fairly good quality.

Copper has been mined to a certain extent at various places in the province, notably at Dorchester and at Annidale, in Queens county. A somewhat extensive plant was erected at Dorchester but the mine was never a success and was closed down a few years ago, evidently for lack of ore in sight. At Annidale there is a very good showing of low-grade chalcopyrite which if found in sufficient quantity, would be valuable.

Iron deposits exist in the vicinity of Bathurst. The ore is a siliceous magnetite, the average iron content being from 43 to 47 per cent with about 0.8 per cent of phosphorus. According to the estimate of E. Lindeman, of the Mines Department, Ottawa, based on magnetometric surveys, the ore reserves are placed at 18,600,000 tons to a depth of 500 feet. Mining operations were started in 1907 and discontinued a few years ago. In all some 180,000 tons were taken out. The ore is too low-grade to be marketed in its natural state, but under favourable conditions and with a concentration process these iron deposits may yet be developed.

Antimony, a metal of many uses, is found near lake George, in York county. It is a constituent of babbit metal, type metal, "white metal," and solder, and its compounds are used in matches, rubber, paints, and enamels, medicine, colouring matter, and antiseptics. The property is not at present being worked.

Manganese has been found at a number of places in the province, both as pyrolusite and as wad or bog ore. Years ago it was mined very successfully, but no mining of any commercial value has been carried on for a number of years. Shipments from the Dawson Settlement (Albert county) bog are planned, the product to be used as a colouring agent in the brick trade.

Diatomaceous earth (infusorial earth), or tripolite, which is useful as a polishing material and for other purposes, exists in quantity as an organic deposit in Pollet lake, near Anagance, also near St. John and opposite Westfield on the St. John river. This material is not being developed.

Nickel is found near St. Stephen, Galena (lead) at Elm Tree, in Gloucester county, and salt near Sussex, in Kings County, also, and evidently in quantity, to the east of the Petitcodiac river a few miles below Moncton, but none of these are being developed.

Limestone is found at many widely separated points throughout the province, but the production of lime is small, being about 600,000 bushels yearly. New Brunswick is also noted for its granite, building, paving and ornamental stone. The total value of the province's output of such stone is about \$100,000 annually.

Most of the Canadian production of grindstones and pulpstones comes from New Brunswick, notably from Northumberland, Gloucester and Westmorland counties. The Miramichi Quarry Company produce pulpstones and building stone at Quarryville, Northumberland county. In



"SHOOTING" AN OIL AND GAS WELL NEAR MONCTON

Natural gas is largely used for power and domestic purposes in the Moncton District

1923 the total production of grindstones in New Brunswick was 1,258 tons, valued at \$59,477. There is a great demand in Canada for pulpstones, most of which are being imported at present. The prospects of the abrasives industry are promising. Good grade commercial clays are to be found in quantity, including a fire clay (2nd grade) at Flower Cove in the Minto area.

Peat bogs are of common occurrence and in several places cover large areas, especially in the southern part of Charlotte county, the adjoining portions of St. John county and in the district bordering on the gulf of St. Lawrence. Notable bogs are those of Spruce lake and point Lepreau, western St. John county, Miscou and Shippegan islands and near the mouths of the Tracadie, Tabusintac, Kouchibouguac and Aldouane rivers. Most of this peat is of the litter variety and is chiefly useful for that purpose.

WATER-POWERS*

In 1918, under a formal agreement between the province of New Brunswick and the Department of the Interior, Canada, water-power investigations involving stream measurement work, profile surveys and storage investigations were undertaken in New Brunswick under the direction of the Dominion Water Power Branch of the Department of the Interior, Canada. At about the same time the New Brunswick Water Power Commission was appointed, to co-operate with the Dominion Water Power Branch on behalf of the province of New Brunswick in connection with this work.

Hitherto, no systematic survey of the water-powers of New Brunswick had been undertaken, although investigations had been made of a number of outstanding sites by private individuals or corporations and a number of developments had actually been made. On international streams, such as the St. Croix and St. John rivers, some work had been done by the United States authorities and by the International Joint Commission. The outstanding power site of the province was Grand Falls, on the St. John river, which had been investigated by private corporations and concerning which there had been some special provincial legislation.

It was essential at the outset to secure systematic stream-flow records on the more important rivers of the province. Gauging stations were established without delay and records have been obtained or are now being obtained at the following points:—

*This section was supplied by the Dominion Water Power Branch.

River	Locality
Denis stream.....	At Moor's Mills.
Eel Lake river.....	At head of falls, 2 miles from North Head village, Grand Manan.
Kennebecasis river.....	At C. P. R. bridge at Norton and 38 miles from St. John.
Lepreau.....	At highway bridge at mouth of river and near Lepreau station.
Madawaska river.....	At highway bridge at St. Rose and about 2 miles below Temiscouata lake.
Magaguadavic river.....	At Lee Settlement highway bridge near Elmcroft P.O. and 7 miles from Bonny River station.
Miramichi river.....	At Blackville highway bridge.
Mispec river.....	About 9 miles from St. John city on highway bridge crossing Mispec river on Black river road.
Nashwaak river.....	At covered highway bridge about 3 miles above Marysville and near Penniac.
Nipisquit river.....	One mile above Grand Falls at Bathurst Mines.
Shogomoc river.....	Just above highway bridge at mouth of river and about 1 mile from Allendale station.
St. John river.....	At Hawkshaw bridge about one-half mile below mouth of Pokiok river.
Tetagouche river.....	At power-house, 8 miles from Bathurst.
Tobique river.....	At Arthurette highway bridge.
Upsalquitch river.....	At railway bridge near Upsalquitch station.
Nipisquit river.....	At Nipisquit Narrows, 4 miles above Bathurst Mines.
Tetagouche river.....	Near West Bathurst.
Musquash river.....	East Branch.
Musquash river.....	West Branch.



MUSQUASH RIVER IN WINTER

Dam one-half mile from its mouth. Power developments on this river are being utilized to supply St. John with electricity.

All existing information was compiled and surveys and investigations are being carried out as rapidly as possible. The following tabulated statements of the water-powers in New Brunswick, computed in accordance with the standard index inventory system of the Dominion Water Power Branch, is the most complete information available:—

Water-powers of New Brunswick

Power Site.	Estimated capacity in h.-p. 24 hrs. daily.			Present installation if any.	Remarks.
	At ordinary minimum flow.	Practicable maximum without storage.	With storage.		
St. John river at Grand Falls.....	22,500	59,000	59,000		
Lepreau Lower Falls.....	260	739	1,182		
Lepreau Big Falls.....	352	1,006	1,636		
Lepreau Ragged Falls.....	301	858	1,545		
Tetagouche, No. 1 Site, 4 miles from Bathurst.....	90	249	300		
Tetagouche, No. 2 Site, 6 miles from Bathurst.....	176	486	585		
Tetagouche, No. 3 Site, 8 miles from Bathurst.....	360	995	1,200		
Tetagouche, No. 4 Site, at Bathurst Electric and Water Power Co.....	286	793	955	300 h.-p. 9,000 h.-p.	
Nipisiquit R., Grand Falls.....	1,330	2,730	1,520		
Nipisiquit R., Pabineau Falls.....	2,400	4,950	2,830		
Nipisiquit R., Narrows.....	410	1,160	2,270		
Shogomoc, near mouth.....	143	410	860		
Pokioke, near mouth.....	236	655	1,545		
Pokioke, above mouth of Little Pokioke.....	335	945	1,160		
Eel R., $\frac{1}{2}$ mile above mouth.....	286	810	1,020		
Eel R., $2\frac{1}{2}$ miles above mouth.....	185	525	800		
Eel R., 3 miles below Meductic.....	732	3,325	.....	3,000 h.-p.	
Magaguadavic at pulp-mill.....	283	1,280	1,146		
Magaguadavic, Second Falls.....	449	2,040	1,910		
Magaguadavic, Indian Rips.....	288	1,310	1,420		
Magaguadavic, Long Rips.....	3,410	9,200	.....	8,800 h.-p.	Low figures indicate power available at high tide and high figures power available at low tide on combination of three existing developments.
Aroostook, at Aroostook Falls.....	2,450	.....	800	1,275 h.-p.	
St. Croix, Union Dam Site.....	2,240	.....	4,000		
St. Croix, Murchie Dam.....	2,090	.....	3,740	725 h.-p.	
St. Croix, Salmon Falls or Cotton Mill Dam Site.....	1,640	.....	2,940	3,600 h.-p.	
St. Croix, Baring Dam.....	1,630	.....	2,900	200 h.-p.	Present installation on American side.
St. Croix, Sprague Falls.....	3,260	.....	5,770	14,350 h.-p.	Present installation on American side.
St. Croix, Grand Falls.....	3,100	.....	5,520	8,000 h.-p.	Present installation on American side.
St. Croix, East Branch, Canoose Rips.....	1,050	.....	1,850		
St. Croix, East Branch, Steep Bank.....	980	.....	1,780		
St. Croix, East Branch, Little Falls.....	190	.....	340		Somewhat larger capacity can be obtained with extensive embankments.
St. Croix, East Branch, Shaw Tannery Privilege.....	180	.....	330		
Musquash river, head of tide.....	789	2,210	.....	11,100 h.-p.	
Upsalquitch, Great Falls.....	760	1,580	840		
Nipisiquit, near head of tide.....	690	1,420	750		
Nipisiquit, below C.N. Ry. bridge.....	840	1,750	965		
Nipisiquit, 10 miles above C.N. Ry. bridge.....	1,020	2,100	1,180		
Nipisiquit, Chain of Rocks rapids.....	2,180	5,260	.....		
Miramichi, White Rapids.....	.....	.....	.....		

*"Rips" is a colloquial word denoting a short rapid or ripple.

As a result of the co-operative arrangement between the provincial authorities and the Dominion Water Power Branch of the Federal Department of the Interior, estimates have been made of the more important power sites throughout the province, a summary of which is shown in the foregoing tabulated statement.

At the 1920 session of the New Brunswick Legislature an Act was passed on similar lines to Acts already in force in Ontario and in Nova Scotia, under which an independent commission was appointed to make detailed investigatory surveys of water-powers within the province and, where desirable, actually carry out the work of development. This commission, known as the New Brunswick Electric Power Commission, assumed also the functions of the New Brunswick Water Power Commission and has carried out as its most important work the development of a power on the Musquash river, from which electric energy is delivered to St. John, Moncton, and other municipalities.

FISHERIES*

The most important of the four great fishing areas of the world is situated off the coast of Eastern Canada. Fishing is the oldest of all Canadian industries, antedating lumbering, mining, and agriculture by centuries. Historical records show that long before the days of Columbus, Cabot, and Cartier, European fishermen came to the great cod banks off Canada's eastern coasts. The codfish was the lure which attracted the pioneers and still brings fleets of fishing vessels from Europe annually. But to the fisherman of New Brunswick there are many other varieties of importance. All along its 600 miles of coast, both in the bay of Fundy and the gulf of St. Lawrence, and on the fishing banks farther out, the fishermen of the province are industriously engaged in the catching of herring, cod, haddock, hake, salmon, smelts, mackerel, pollock, alewives (gaspereau), shad, and lobsters, oysters, and clams.

New Brunswick ranks third among the provinces of the Dominion in the value of its fisheries, being exceeded only by British Columbia and Nova Scotia. The value of the fish and fish products marketed in 1922 was \$4,662,920 for sea fisheries and \$25,356 for inland fisheries.

Some deep-sea fishing is carried on, but New Brunswick fishermen visit only the nearby banks in the gulf of St. Lawrence or around the bay of Fundy. They use very small boats for this purpose, which are quite a contrast to the large steam trawlers and fishing schooners used by Nova Scotians, New Englanders, and others on the larger banks farther out. Deep-sea fishermen clean and pack their fish either in ice or salt. The varieties caught are cod, haddock, pollock, hake, cusk, and halibut.

The inshore fisheries are by far the more important in New Brunswick. The method of fishing from boats is the same as on the banks but

*Revised by the Fisheries Branch, Department of Marine and Fisheries.

the large schooners are not required. The varieties caught are similar but include as well, mackerel, shad, herring, gaspereau, smelt, salmon, lobster, oysters, and quahaugs, in all of which boats are employed.

The catch is brought in "undressed," and is cleaned ashore, there to be sold as fresh fish, salted or dried. Two men go in each boat, fishing from two to ten miles offshore for the ordinary varieties caught, and running out to the fishing grounds daily. Most of the fishermen use fast motor-boats, twenty to thirty-five feet in length.

Lobsters

This fishery is confined to the Atlantic coast and is purely inshore. The lobster is caught in traps or "pots," which are usually from $2\frac{1}{2}$ to 4 feet long, by 2 feet wide, and $1\frac{1}{2}$ feet high, and are constructed in the form of a half-cylinder with strips running lengthwise. The ends have a funnel-shaped opening made of netted cord with an entrance ring through which the lobster crawls to reach the bait spiked on the floor of the trap. Once inside the crustacean cannot escape. The trap is weighted and lowered to the sea bottom by a rope attached at its upper end to a wooden buoy painted with the owner's mark. The traps are sometimes set attached to each other by anchored ground lines.

Lobster fishermen set from fifty to two hundred traps, and use in tending them motor-boats from twenty to thirty feet in length. Sometimes special hoisting engines are used for hauling the gear, but the majority of lobster-men heave the traps up by hand or with the aid of a winch. Cod heads, small herring, hake and almost any fresh fish are used as bait.

For live lobsters and for those in a boiled fresh state, packed in ice, the United States offers the greatest market, and thousands of crates are shipped from southern New Brunswick during the season. Owing to the distance, points along the gulf of St. Lawrence are unable to ship lobsters in this state to American ports with profit, so the greater quantity caught there is canned.

There are no size limits for the lobster, except in Bay of Fundy waters, where a minimum size is set for legal capture and sale. Soft-shelled and "berried" lobsters, *i.e.*, those in the moulting and egg-bearing stage, must be liberated when caught, and traps cannot be set in less than two fathoms of water.

Herrings and Sardines

These two important fisheries may be grouped together, as the sardine so-called, in Canada, is really young herring. This fish strikes inshore in enormous quantities during the summer and is captured largely by means of brushwood weirs erected in tidal coves and places sheltered from a rough sea. These weirs are built of stakes driven into the sand from high-

water mark seaward, the spaces between the stakes being interlaced with willow or brush. The whole is constructed in the form of a corral or pond with a wide entrance or "shoot" seaward. At high-water, the weir is almost submerged and during the ebb the herring are caught. The fish can then be bailed out or kept alive until required. The well-known sardine fishery



SARDINE FISHING NEAR SEAL COVE

The catching and canning of sardines or young herring is an important feature of New Brunswick fisheries.

on Passamaquoddy bay depends on weirs for the capture of the small herring which they can as sardines. Great quantities of herring are caught in this manner for use as food, fresh, canned, smoked, boneless and pickled, and many tons are utilized for bait and fertilizer. Mackerel, salmon, shad and alewives or gaspereau are also caught in these weirs.

The possibilities of New Brunswick's sardine and herring industries are immense. The former is being conducted along proper lines with success, but the methods of pickling and curing of herring need improvement. With stricter attention to these matters along lines urged by the Dominion Fisheries Branch, the Canadian herring should compete in the markets of the world on equal terms with the European.

Mackerel

The Canadian mackerel fishery is mainly inshore and most of the catch is taken in shore traps. Where fished offshore they are pursued by schooners and taken in purse seines or nets handled from small boats. They are also caught by "jigging" hooks in an area of water in which bait in the form of herring pounded to mush has been thrown. Some seasons this fish is caught in great numbers while in others is very scarce.

Gaspereau and Shad

The gaspereau is also known as the alewife and branch herring, and is caught while ascending fresh-water streams in the spring to spawn. New Brunswick rivers supply a great proportion of the Canadian catch of this fish. The method of capture is usually by dip-nets, drift-nets and weirs. Most of the catch is salted and packed in barrels, but a certain amount is marketed fresh.

The shad is caught in the spring similarly to the gaspereau, whose run up the rivers it follows. New Brunswick leads in the shad fishery, and as this is a favourite food fish of delicate flavour, and very popular in the United States, the industry is of great value.

Oysters

New Brunswick is the largest producer of oysters in the Dominion and has excellent prospects of reviving and greatly developing this industry. The bivalve is found on mud bottoms in shallow sheltered waters on the gulf of St. Lawrence coasts of the province, usually at the mouth of tidal rivers which flow into estuaries or bays. They are taken either by great tongs which grasp and wrench them from the bottom, or by dredging from gasoline or steam vessels.

The Canadian oyster has a very fine reputation. Dr. Joseph Stafford, who is regarded as the highest Canadian authority on oyster culture, says that the Canadian oyster is superior to any other. After referring to the high reputation of the flavour of the Canadian as compared with the United States oysters, Dr. Stafford says: "Our Canadian oysters took first place at the International Exposition at Paris some years ago. They had to be collected from various places in the Maritime Provinces and during that time they were standing in barrels on wharves, sometimes in the hot sun. After having been subjected to that treatment they had to be transported across the Atlantic and placed on wharves there until the exhibit could be arranged, and yet when placed in competition with European oysters, that had been taken from the water only the day before, they were awarded first place."

Owing to lack of proper methods of conservation and propagation the wonderful natural oyster beds of the province have been in danger of becoming fished out, but a system of farming and oyster culture is now in

existence. Under modern methods of oyster farming, great areas of tidal mud on the eastern coast of the province are being planted with seed oysters for future harvesting, and the prospects for a great permanent industry are bright.

Atlantic Salmon

The Atlantic salmon fishery is extensively prosecuted in New Brunswick and large quantities are caught at the mouths of the St. John, Miramichi, and Restigouche rivers. These salmon are usually caught in drift



DRYING CODFISH, ST. JOHN, N.B.

New Brunswick, in 1923, produced 28,414,800 pounds of codfish, 8,287,700 pounds of which was marketed after being dried and packed

and gill-nets from small two-masted boats. Trap and pound-nets somewhat similar to herring nets are also used.

Other Fisheries

Smelts are caught in the bays and brackish rivers in the winter through the ice. The fishermen construct small huts on the ice from which they fish either by gill or bag-nets or hook and line. These are small fish, but the industry is important to the province.

Clams, Quahaugs and Scallops constitute a valuable asset to New Brunswick. Clams are dug out of the sand and mud flats which are laid bare at low tide. Clam digging is hard work and the diggers get out on the flats and bars as soon as the ebb tide makes. Quahaugs are usually found around the edges of oyster beds and such places. They are dug up with

forks attached to long handles, which are operated from boats. Scallops are native to the deeper waters like oysters and are tonged and dredged in a similar manner. Two-thirds of the catch of these shellfish are sold fresh in barrels while one-third is canned. New Brunswick is the greatest producer of these varieties in the Dominion.

Cockles, mussels and winkles are very plentiful along the coasts but are not gathered to any extent as in Europe. Cockles are dug out of the sand or mud at low water, while mussels and winkles are gathered from the rocks to which they adhere. There should be opportunity for considerable development here.

Although other species than those above referred to find their way to market there is no regular fishery conducted for any of them, as they are taken along with other fish. The men engaged in the coastal fisheries of New Brunswick are exclusively Canadians and residents of the province.

Statistics of Catch

The following table gives the quantities and values to the fishermen at point of landing, of the chief kinds of sea-fish caught in 1923:

Kinds of fish	Quantity	Value	Kinds of fish	Quantity	Value
		\$			\$
Salmon..... cwt.	20,292	210,275	Sardines..... bbls.	134,694	393,767
Lobsters..... "	70,647	901,859	Halibut..... cwt.	146	2,548
Cod..... "	284,148	320,462	Flounders..... "	791	1,801
Haddock..... "	6,376	13,270	Skate..... "	267	369
Hake and cusk..... "	20,164	9,881	Smelts..... "	41,928	453,501
Herring..... "	245,338	181,542	Tom-cod..... "	14,139	14,810
Mackerel..... "	12,843	38,839	Oysters..... bbls.	14,584	67,193
Shad..... "	2,473	21,532	Clams and Quahaugs.... "	21,911	35,514
Alewives..... "	42,215	35,652	Winkles..... cwt.	280	960

Capital represented in fishing boats, wharves and equipment amounted to \$3,366,000 with 9,394 men employed and in canning and curing establishments \$1,290,000 with 2,663 persons employed.

The sea fisheries are under the care of the Fisheries Branch of the Federal Department of Marine and Fisheries. It enforces close seasons, safeguards the spawning period, and prevents illegal poaching on closed areas. It controls fish hatcheries and the transfer of fry. It also carries on investigations into problems confronting the fish industry and offers advice and assistance to fishermen in the conduct of their operations.

The inland fisheries are largely administered by the Department of Lands and Mines of the Provincial Government, and where they are confined to angling for the purposes of sport, are dealt with under the section devoted to hunting and angling.

Scientific fishery researches are carried on by the Dominion Government at the Biological Station at St. Andrews, Charlotte county.

HUNTING AND ANGLING*

New Brunswick has always been famous for its big game. From the early days of the French occupation the great attraction of the country has been the abundance of wild animals, and it is still a veritable game preserve although one of the first sections of North America to be colonized. The secret of this is found in the retention of the forests, in the enactment and enforcement of wise game laws, and in an intelligent appreciation on the part of the people of the value of the game interests as an asset to the province. No province or state is more justly famous to-day for the amount of big game in its forests than is New Brunswick.

During the open season of 1923 some five hundred licenses for big game were sold to non-residents and ten thousand to resident sportsmen. The number of moose killed and reported during the season was about 1,000 and the number of deer about 2,500. The revenue from the sale of hunting licenses is used almost exclusively for forest and game protection, and the results have been highly satisfactory from the standpoint both of the sportsman and of the preservation of the game.

A game refuge in Northumberland county consists of 400 square miles, where all forms of game are safe from molestation. This refuge ensures the preservation from extinction of all varieties and keeps the surrounding forests where hunting is permitted always well stocked.

Lines of railway tap every county in the province and the most remote sections are but a brief journey from the large cities of the Eastern and Middle States and Central Canada. The service on these railways is first-class in every particular and the officials will be found ready to supply information to travellers.

Moose

The Moose is generally conceded to be the finest game animal in America, and nowhere—Alaska alone excepted—can better specimens be found than in New Brunswick. Here the cows have been protected by law for many years and the result has been very satisfactory. These animals have increased in number to a very considerable degree in recent years and to-day there are thousands of them roaming in the woods where twenty-five years ago there were but hundreds.

Caribou and Deer

The caribou, which is a smaller animal than the moose, and is similar to the reindeer of the Northern Europe, was also fairly abundant at one time, but is at present somewhat scarce. Unlike the moose, which leads a more or less solitary life, caribou are usually to be found in herds, which roam about from place to place in search of the food they most prefer.

*The information in this section was furnished by the Department of Lands and Mines, Fredericton, N.B.

The Red or Virginia deer is found practically all over the province, and is so plentiful as to become in some sections something of a nuisance on account of the raids it makes upon the farmers' crops. Wild-cats have been killing a number of young deer during the last couple of years; forest fires have also taken their toll.

Fur-bearing Animals

A considerable variety of fur-bearing animals are also to be found in the New Brunswick forests, among which may be mentioned the bear, raccoon, wolverine, marten, mink, otter, beaver, lynx, wild-cat, muskrat, squirrel, and woodchuck. Hares also are found in great numbers all over the province. This animal turns white in winter. Bears are found chiefly in the less frequented parts of the forest, and they are somewhat shy, rarely showing fight unless it be a she-bear in defence of her offspring.

Wild Fowl

New Brunswick has also and deservedly a great reputation for feathered game. Wild geese are fairly abundant, and there are six species of wild ducks, besides brant. The great haunts of wild geese and of brant are on the north shore, but wild ducks are to be found on rivers all over the province. There are two species of partridge, although the proper designation of this bird is grouse. Under protection the ruffed grouse have become numerous again. Curlew, plover, snipe and woodcock are also to be found and afford admirable sport. The great northern diver or loon is to be found in all the larger rivers. In addition to these, there are two species of eagles, five species of hawks, and four or five varieties of owls. These are but a few of the birds of New Brunswick, of which there are about two hundred species in all. A splendid collection of them can be seen in the museum of the university at Fredericton.

The care and management of all migratory birds, including geese, brant, teal, black duck, shore birds, snipe, and woodcock, has passed into the hands of the Federal Government. The shooting of sea-gulls, pheasants and small birds frequenting fields and woods (except blackbirds, crows and English sparrows) is prohibited at any season.

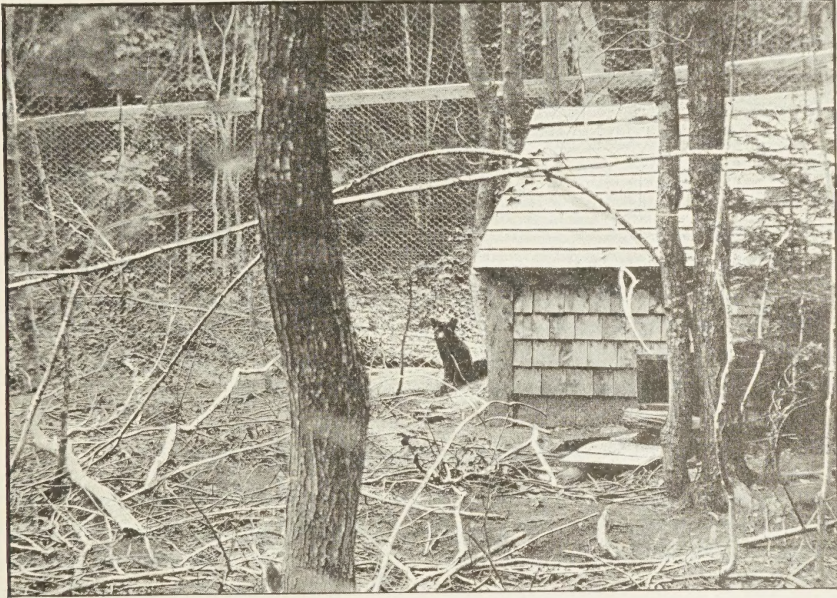
Guides

The guides of New Brunswick have no superiors. They know the woods and the habits of animals. They are a good class of men who do their work thoroughly and as a rule are agreeable companions. There are three hundred registered in the province, half of whom are camp owners who hire other guides not owning camps of their own, but who are good woodsmen, hunters, and cooks. As each party has its own district there is little danger of accidents in the woods. Camp owners furnish complete outfits excepting guns and ammunition. A list of these guides may be obtained from the Crown Lands office at Fredericton.

Angling

Besides being a land of big game and wild fowl, New Brunswick has much to offer the sportsman who enjoys using the rod as well as the rifle and shotgun. Many varieties of fish abound in the inland waters of the province, the chief being salmon, trout, bass, chub, perch, pickerel, eels, landlocked salmon and whitefish.

Some of the larger rivers, such as the Restigouche, Miramichi, Tobique, Upsalquitch, and Nipisiguit, are famed for their salmon fishing and in fact have few superiors in the world so far as this royal sport is concerned.



FOX FARMING IN NEW BRUNSWICK
Over one million dollars is invested in the fur-farming industry in the province.

While salmon fishing has many staunch devotees, it is generally conceded that trout angling is a sport more generally enjoyed. New Brunswick is noted for its excellent trout, having such a large number of lakes and streams far from settlements and beyond the reach of the small boy. There is excellent fishing to be had on the Nipisiguit river above the falls, and also on Green river. The lakes above the town of Campbellton also afford fine trout fishing. Easier trips, which can be made at less expense, will be found in the vicinity of Skiff lake and of the Tabusintac, Bartiboque, Pokemouche, Charlo, and several other streams.

Game Regulations

Features of the game laws of New Brunswick of special interest to non-resident sportsmen are briefly as follows:—

The open season for moose is from October 1 to November 30 and for deer from September 15 to November 30. Non-resident license fee for

hunting same is \$50 and resident license \$3. These licenses permit the holders to shoot one bull moose and two deer each. The shooting of cow or calf moose is prohibited, as is also the hunting of moose and deer with dogs. The hunting of moose or deer by means of "Jack-Light" or traps or snares is also prohibited. No non-resident shall enter the woods of the province to hunt without a registered guide, and such guide must be a bona fide resident of the province. It is unlawful to hunt or kill game on Sunday under double penalty. It is unlawful to carry firearms in the woods during the close season without a special permit. When a person has killed a moose, he must bring out the head and affix thereto a tag, stating by whom it was killed, and the number of his license, and forward a duplicate of such tag to the Department of Lands and Mines at Fredericton. No game head is to be shipped without a tag being attached thereto. The carcase of game or parts thereof cannot be taken out of the province without a permit issued by the above department. Bird licenses are issued to non-residents on payment of a fee of \$25. Fishing licenses are issued to non-residents for a fee of \$25 for salmon and \$10 for trout angling.

Reliable information as to hunting, fishing and canoeing trips, guides, etc., in New Brunswick can be obtained by addressing any of the following: Deputy Minister of Lands and Mines, Fredericton; Chief Game Warden, Fredericton, N.B.; President N.B. Tourist Association, St. John, N.B.; Secretary N.B. Guides' Association, Fredericton, N.B.

FUR-BEARERS AND FUR FARMS

The same conditions which make game so plentiful afford great opportunities for the trapper. The principal animals of the province whose fur is valuable are black bear, fox, lynx, beaver, raccoon, sable, marten, mink, otter, and muskrat. The recent great rise in the value of furs has made trapping particularly profitable and has also provided an impetus to fur-farming.

The success achieved in the raising of foxes in the neighbouring province of Prince Edward Island was instrumental in the development of the industry in New Brunswick. To-day there are many fur-farming companies established in the province with a total valuation of approximately one million dollars. The Provincial Government has enacted legislation to protect and further the interests of this industry.

The control of these animals in captivity is now fairly well understood, so that the industry may be regarded as on a stable basis. For some time, however, this was not the case and many foxes died from causes we now know to be preventable. Confidence is therefore returning to the business, which in capable hands may be fairly regarded as a profitable undertaking in New Brunswick.

Statistics as to animals caught, furs marketed and fur farms in the province may be obtained from the Bureau of Statistics, Ottawa, or the Department of Lands and Mines, Fredericton.

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